

LBT-D307/D307CD

SERVICE MANUAL

REVISED

AEP Model

East European Model

LBT-D307

UK Model

LBT-D307CD

These system are composed of following models.
As for the service manual, it is issued for each
component model, then, please refer to it.

COMPONENT MODEL NAME FOR THESE SYSTEM

	LBT-D307CD	LBT-D307	
	UK	AEP/Germany/EE	Italian
DECK RECEIVER	HST-D307		
TURN TABLE	PS-LX49P		PS-LX49
CD PLAYER	CDP-M33		
CD CHANGER	CDP-C322M		
SPEAKER SYSTEM	SS-A307E	SS-A307	

PARTS LIST

• Items marked "*" are not stocked since
they are seldom required for routine
service. Some delay should be anticipated
when ordering these items.

Part No.	Description	Remarks
1-501-369-11	ANTENNA, LOOP (Except Germany)	
1-501-374-11	ANTENNA, LOOP	
△ 1-564-085-00	PLUG, AC (UK)	
3-754-671-11	MANUAL, INSTRUCTION (English)(UK)	
3-754-671-41	MANUAL, INSTRUCTION (English, German, Spanish, Portuguese) (AEP)	
3-754-671-51	MANUAL, INSTRUCTION (German, Dutch, Swedish, Italian) (AEP/Germany/ Italian)	
3-754-671-61	MANUAL, INSTRUCTION (English, German, Polish, Russian)(EE)	
4-951-306-01	INDIVIDUAL CARTON (Italian)	
4-951-307-01	INDIVIDUAL CARTON (AEP/Germany)	
4-951-308-01	INDIVIDUAL CARTON (EE)	
4-951-309-01	INDIVIDUAL CARTON (UK)	

Part No.	Description	Remarks
1-645-697-11	REMOTE CPMMANDER (RM-S305)	
*3-703-713-41	STCKER, SONY SYMBOL (10)	
3-707-584-01	COVER, BATTERY (RM-S305)	
4-921-934-01	SHEET, PROTECTION	
*4-949-865-01	CUSHION	

NOTE:

The components identified by mark △ or
dotted line with mark △ are critical for
safety.
Replace only with part number specified.

EE : East European

COMPACT Hi-Fi STEREO SYSTEM
SONY®



9-956-983-12

Sony Corporation
Audio Group

English
92G1962-1
Printed in Japan
© 1992.7

Published by Customer Relations and Service Group

HST-D307

SERVICE MANUAL


AEP Model

UK Model

East European Model



HST-D307 are the
STEREO DECK RECEIVER
in LBT-D307/D307CD.

Dolby noise reduction manufactured under license
from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks
of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW	
Tape Transport Mechanism Type	DECK A	TCM-190RA12CL
	DECK B	TCM-190RB22CL

SPECIFICATIONS

Tuner System

FM stereo
FM/AM superheterodyne tuner
65 to 74MHz(East European model)

FM tuner section

Tuning range 87.5 to 108 MHz
Antenna 75 ohms unbalanced
Intermediate frequency 10.7 MHz

MW/LW tuner section

Tuning range MW: 522 to 1,611 kHz (Italian model)
531 to 1,602 kHz
(AEP, UK, Germany,
East European model)
LW: 144 to 288 kHz (Italian model)
153 to 279 kHz
(AEP, UK, Germany,
East European model)

Antenna

AM loop antenna
External antenna terminal

Intermediate frequency

450 kHz

Amplifier

DIN power output 40W + 40W (6 ohms, at 1kHz)
Continuous RMS power output
48W + 48W
(6 ohms, at 1 kHz, 5% THD)

Music power output 80W + 80W (6 ohms)

Input	Jack type	Sensitivity	Impedance
PHONO	Phono	3mV	47 kohms
VIDEO	Phono	300mV	47 kohms
CD	Phono	300mV	47 kohms

Output	Jack type	Impedance
SURROUND SPEAKER	Phono	Accepts speakers of 16 ohms
HEADPHONES	Stereophone	Accepts headphones of 8 ohms or more

Frequency response CD: 15 Hz to 50 kHz ± 3 dB

Cassette deck

Recording system 4-track 2-channel stereo
Frequency response DOLBY NR OFF
With Type II cassette (Sony UX-S)
40 Hz to 14 kHz (± 3 dB)
With Type I cassette (Sony HF-S)
40 Hz to 13 kHz (± 3 dB)

— continued on next page —



COMPACT Hi-Fi STEREO SYSTEM
SONY®

Turntable (Except for HST model)

Platter	30cm
Tone arm type	Dynamically balanced
Cartridge type	Moving magnet type
Stylus	CN-234 (0.6 mil diamond)
Weight	Approx. 2.3kg
Dimensions	Approx. 355 × 95 × 345 mm (w/h/d), including projections)

Supplied accessories

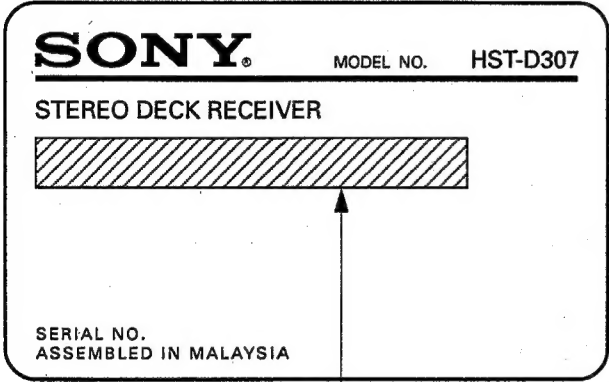
Remote commander RM-S305 (1)
Batteries Sony SUM-3 (NS) (2)
FM wire antenna (1) (excluding Germany model)
AM loop antenna (1)
45-rpm adaptor (1) (excluding for HST model)

General

Power requirements	220 – 230V AC, 50/60Hz 240V AC, 50Hz (UK model)
Power consumption	130W 250W (UK model)
AC outlet	Switched 100W max.
Weight	Approx. 9.1kg
Dimensions	Approx. 355 × 380 × 325 mm (14 × 15 × 12 7/8 inches) (w/h/d, including projections)

MODEL IDENTIFICATION

– SPECIFICATION LABEL –



AEP, Germany, Italian,
East European MODEL : AC 220 - 230V, 50/60Hz
UK MODEL : AC240V, 50Hz

TABLE OF CONTENTS

Section	Title	Page
1.	GENERAL	
1-1.	Location of Controls	3
2.	ADJUSTMENTS	
2-1.	Mechanical Adjustments	4
2-2.	Electrical Adjustments	4
3.	DIAGRAMS	
3-1.	Circuit Boards Location	10
3-2.	Block Diagrams	11
3-3.	IC Block Diagrams	13
3-4.	Semiconductor Lead Layouts	13
3-5.	Printed Wiring Boards (TC Section)	16
3-6.	Schematic Diagram (TC Section)	19
3-7.	Printed Wiring Boards (Main Section)	24
3-8.	Schematic Diagram (Main Section)	29
3-9.	Printed Wiring Boards (Panel Section)	34
3-10.	Schematic Diagram (Panel Section)	39
4.	EXPLODED VIEWS	
4-1.	Cabinet Section	43
4-2.	Front Panel Section	44
4-3.	Mechanism Deck Section 1	45
4-4.	Mechanism Deck Section 2	46
4-5.	Mechanism Deck Section 3	47
5.	ELECTRICAL PARTS LIST	48

SAFETY-RELATED COMPONENT WARNING!!

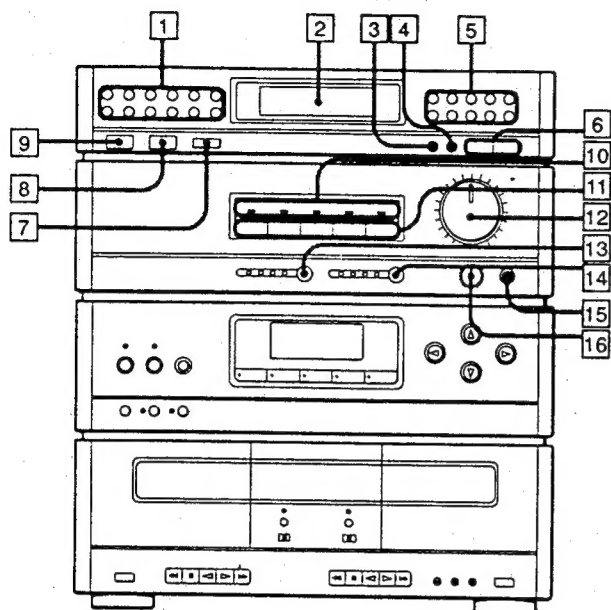
COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

This section is extracted from instruction manual.

SECTION 1 GENERAL

1-1. LOCATION OF CONTROLS

Refer to the pages indicated in parentheses for details.

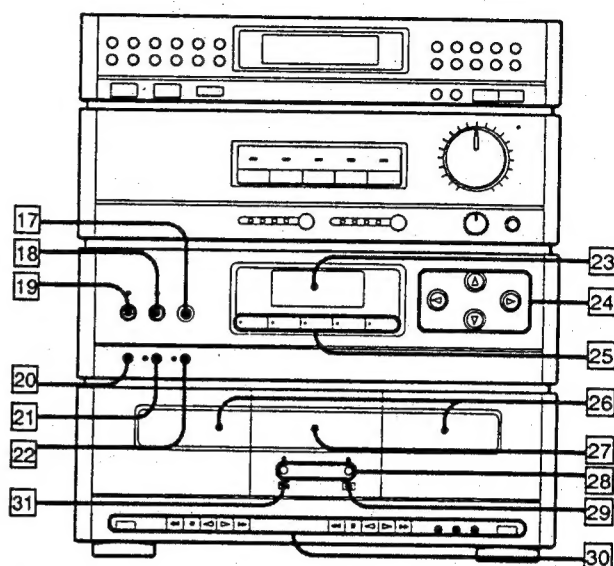


Tuner

- 1 Buttons for setting the clock and timer (24, 26, 27)
- 2 Display window
- 3 SHIFT button (10)
- 4 BAND SELECT button (9)
- 5 Numeric buttons (10)
- 6 TUNING/TIME/CHARACTER buttons (9, 11, 24, 26)
- 7 SLEEP button (25)
- 8 Remote sensor
- 9 POWER button (6)

Amplifier

- 10 Function indicator
- 11 Function selectors (VIDEO/TAPE/CD/TUNER/PHONO)
- 12 VOLUME control and indicator (7)
- 13 SURROUND button and indicator (19)
- 14 DBFB (dynamic bass feedback) button and indicator (19)
- 15 HEADPHONES jack
- 16 BALANCE control (7)



Graphic Equalizer

- 17 CLEAR button (19, 22)
- 18 MEMORY button and indicator (22)
- 19 PERSONAL FILE button and indicator (23)
- 20 DISPLAY button (11, 24)
- 21 EFFECT button and indicator (15, 19)
- 22 EQ REC (equalizer recording) button and indicator (15, 20)
- 23 Display window
- 24 CURSOR CONTROL buttons (21)
- 25 Numeric buttons and indicators (20, 23)

Cassette Deck

- 26 Cassette holders
- 27 Operating indicators
- 28 SYNCHRO DUBBING buttons (17)
- 29 DIRECTION MODE selector (12, 13, 15, 17)
- 30 Tape operation buttons
 - ◀◀ Leftward fast winding/AMS*
 - ▶▶ Rightward fast winding/AMS*
 - ▶ Forward play
 - ◀ Reverse play
 - Stop
 - ▲ EJECT
 - || PAUSE (deck B only)
 - REC MUTE (record muting) (deck B only)
 - REC (record) (deck B only)
- 31 DOLBY NR (noise reduction) switch (15)

* AMS is the abbreviation of Automatic Music Sensor.

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENT

PRECAUTION

- 1. Clean the following parts with a denatured-alcohol-moistened swab:
record / playback head pinch roller
erase head rubber belts
capstan idler
- 2. Demagnetize the record / playback head with a head demagnetizer
- 3. Do not use a magnetized screwdriver for the adjustments.
- 4. After the adjustments, apply suitable locking compound to the parts adjusted.
- 5. The adjustments should be performed in the rated power supply voltage unless otherwise noted.

Torque Measurement

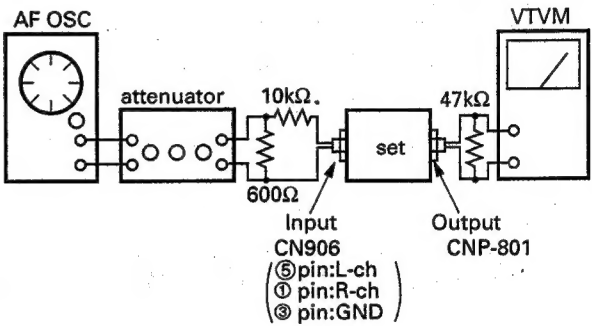
Torque	Torque meter	Meter reading
FWD	CQ-102C	35 to 60g•cm (0.49 to 0.83 oz•inch)
FWD Back tension	CQ-102C	2 to 6g•cm (0.028 to 0.08 oz•inch)
REV	CQ-102RC	35 to 60g•cm (0.49 to 0.83 oz•inch)
REV Back tension	CQ-102RC	2 to 6g•cm (0.028 to 0.08 oz•inch)
FF, REW	CQ-201B	70 to 110g•cm (0.98 to 1.52 oz•inch)

2-2. ELECTRICAL ADJUSTMENT

Note : The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording. The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.
DOLBY NR switch : OFF
DIRECTION MODE switch : \rightleftarrows
- Standard Record :
Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

– Record Mode –



Standard Input Level

input terminal	Input (CN906)
source impedance	10kΩ
input level	0.25V (−10dB)

Standard Output Level

output terminal	Output (CNP-801)
load impedance	47kΩ
output level	0.44V (−5dB)

Test tape

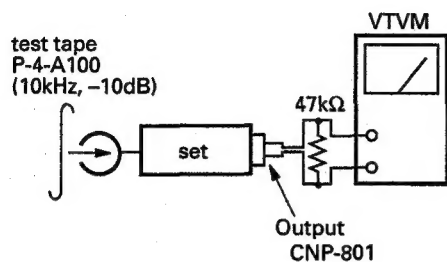
Type	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record / Playback Head Azimuth Adjustment

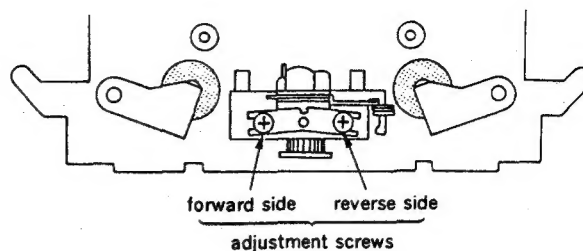
DECK A DECK B

Procedure :

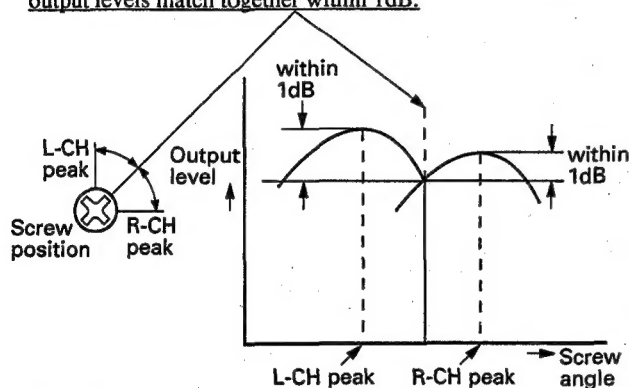
1. Mode : FWD Playback



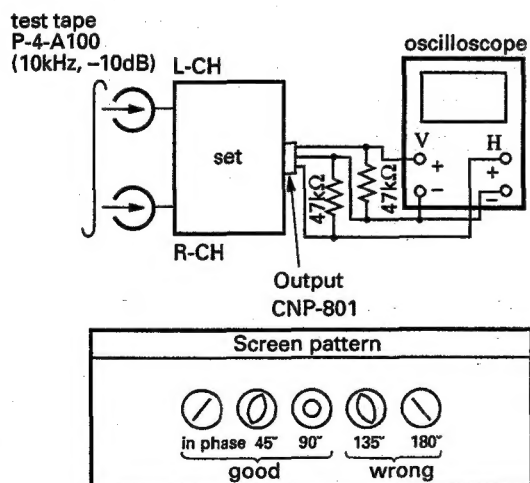
- Azimuth adjustment screw



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



3. Phase Check
Mode : FWD playback



4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

Tape Speed Adjustment

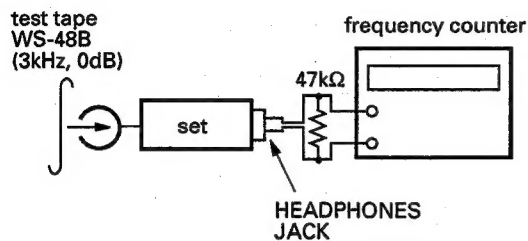
DECK A

DECK B

Perform high speed adjustment before normal speed adjustment

Procedure :

Mode : FWD playback



(High Speed Adjustment)

1. Short test pin CNP901 on TC SIGNAL board.
2. Set to FWD playback mode.
3. Keep on pressing the HIGH SPEED DUBBING switch.
4. Adjust RV72 so that the frequency counter reading becomes 6,000 ± 30 Hz.
5. After adjustment, disconnect CNP901 shorted in step 1.

(Normal Speed Adjustment)

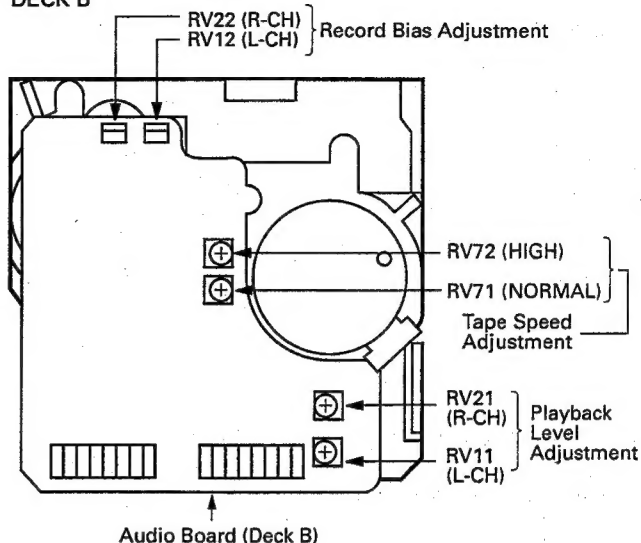
1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reading becomes 3,000 ± 15 Hz.

Frequency difference between deck A and deck B the beginning of the tape should be within 1.0%.

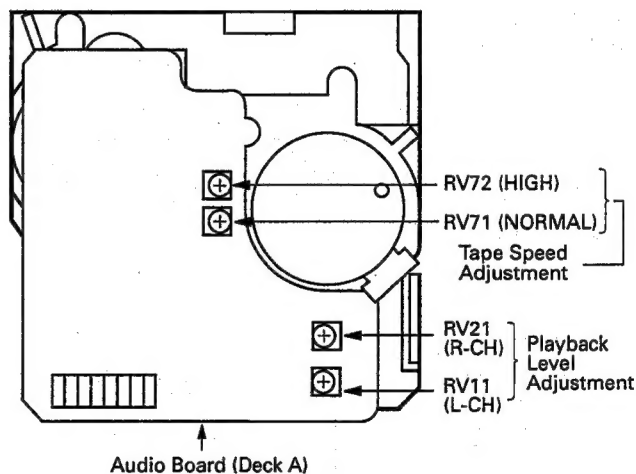
Adjustment Location : MD-A, MD-B board

Adjustment Location : AUDIO board (DECK A),
AUDIO board (DECK B)

DECK B

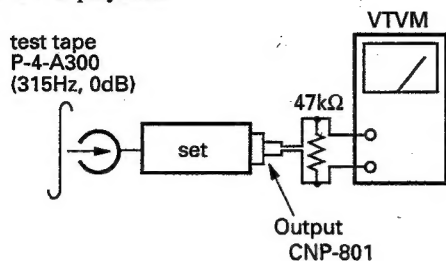


DECK A



Playback Level Adjustment**DECK A****DECK B****Procedure :**

Mode : FWD playback



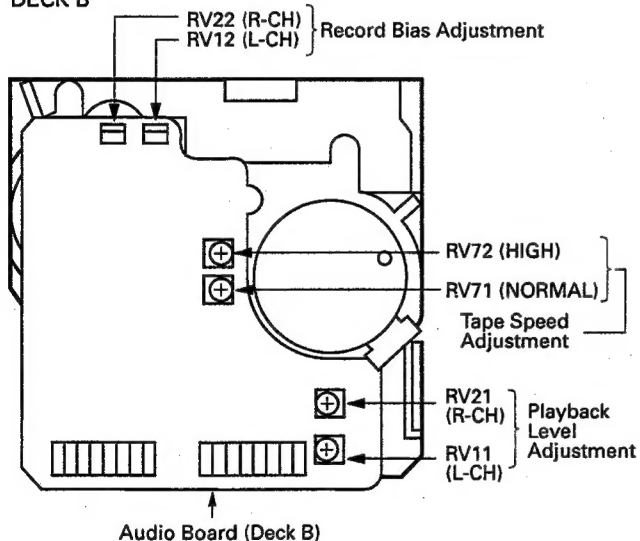
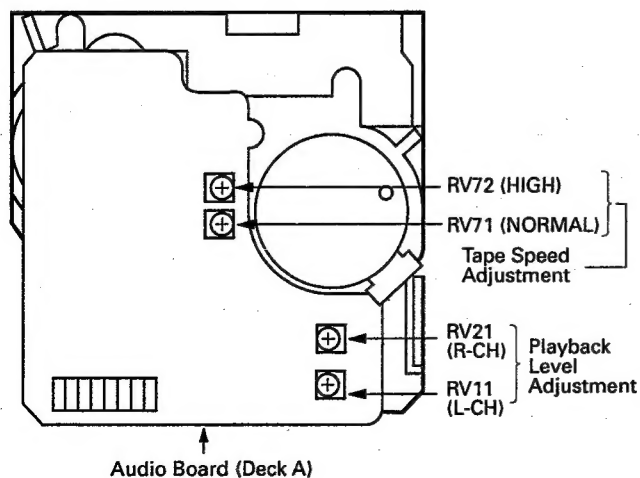
Adjust RV11 (L-CH), RV21 (R-CH) so that the reading on VTVM meets the adjustment limits below.

Adjustment Limits :Output level : $-2.7 \pm 1.5\text{dB}$

Level difference between channels : less than 1.0dB

Confirm that the OUTPUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : AUDIO board (DECK A),
AUDIO board (DECK B)

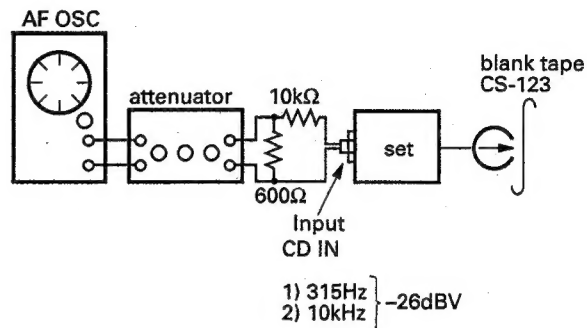
DECK B**DECK A****Record Bias Adjustment****DECK B****Setting :**

REC LEVEL control : Standard Record (See page 4).

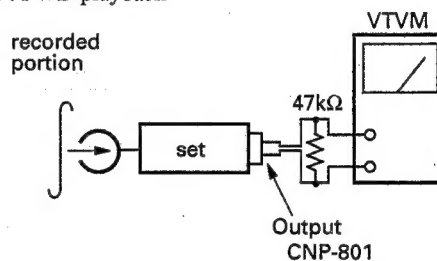
Test pin CNP-901: Short

Procedure :

1. Mode : record

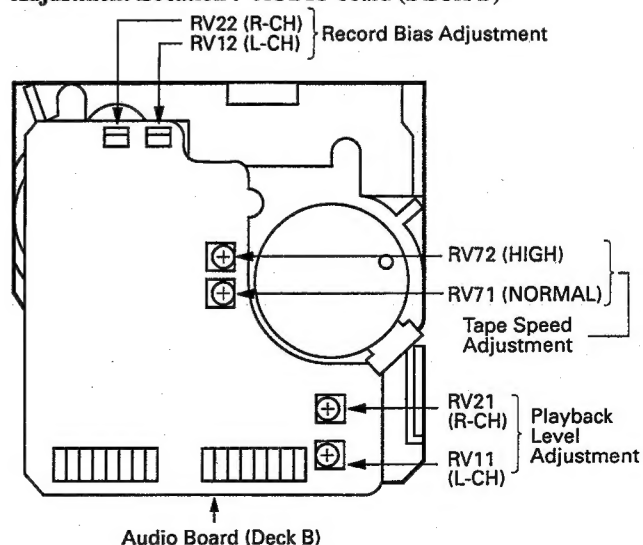


2. Mode : FWD playback



3. Playback the signal recorded in step 1.

Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust RV12 (L-CH), RV22 (R-CH) and repeat the steps given above.

Adjustment Location : AUDIO board (DECK B)

Record Level Adjustment

DECK B

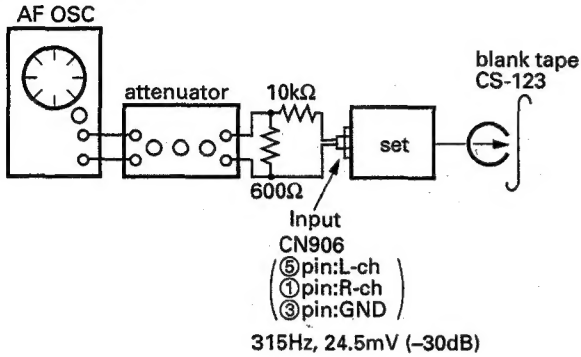
Setting :

REC LEVEL control : Standard Record (See page 4).

Test pin CNP-901 : Short

Procedure :

1. Mode : record

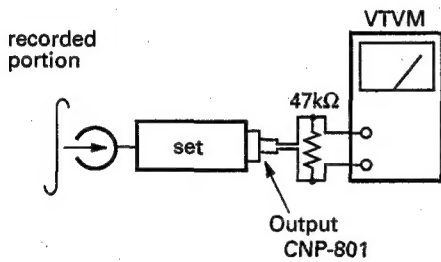


3. Playback the signal recorded in step 1.

Confirm that the signal level is within the adjustment limits below.
If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the steps given above.

Adjustment Limits : -22.7dB \pm 0.5dB

2. Mode : FWD playback

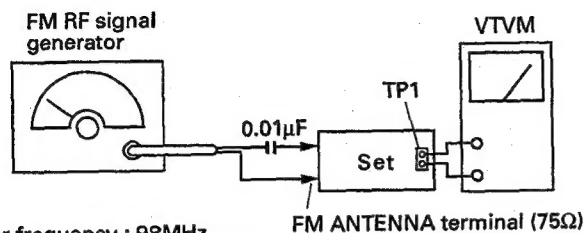


Adjustment Location : MAIN board

TUNER SECTION

As FM FRONT-END FE301 is difficult to repair if faulty, replace it with new one.

FM NULL Adjustment

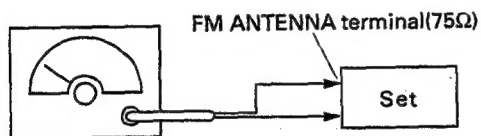


Carrier frequency : 98MHz
Output level : 1mV (60dBμ)
Modulation : 1kHz, 75kHz deviation

Procedure :

1. Tune the set to 98MHz.
2. Adjust T301 for 0V reading on the VTVM.

FM Tuned Level Adjustment

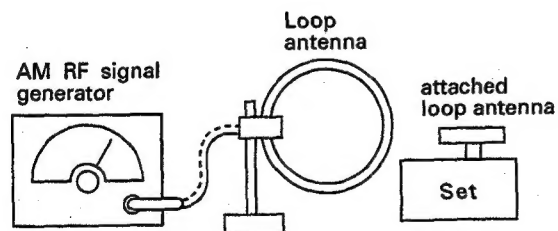


Carrier frequency : 98MHz
Output level : 0.018mV (25dBμ)
Modulation : 1kHz, 75kHz deviation

Procedure :

1. Tune the set to 98MHz.
2. Adjust RV302 to the point where "TUNED" sign on FL601 just turns light.

• AM SECTION



Carrier frequency : 216MHz
Modulation : 400Hz, 30% modulation

AM Tuned Level Adjustment

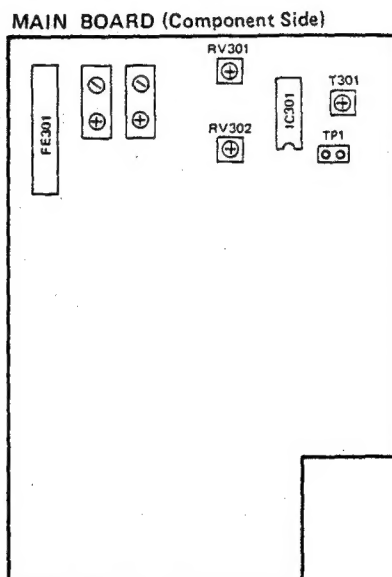
• MW BAND

1. Set loop antenna input level to 0.56mV (78dBμ/m) and no signal tuned light should not on.
2. Adjust RV301 to the point where "TUNED" sign on FL601 just turns light.

• LW BAND

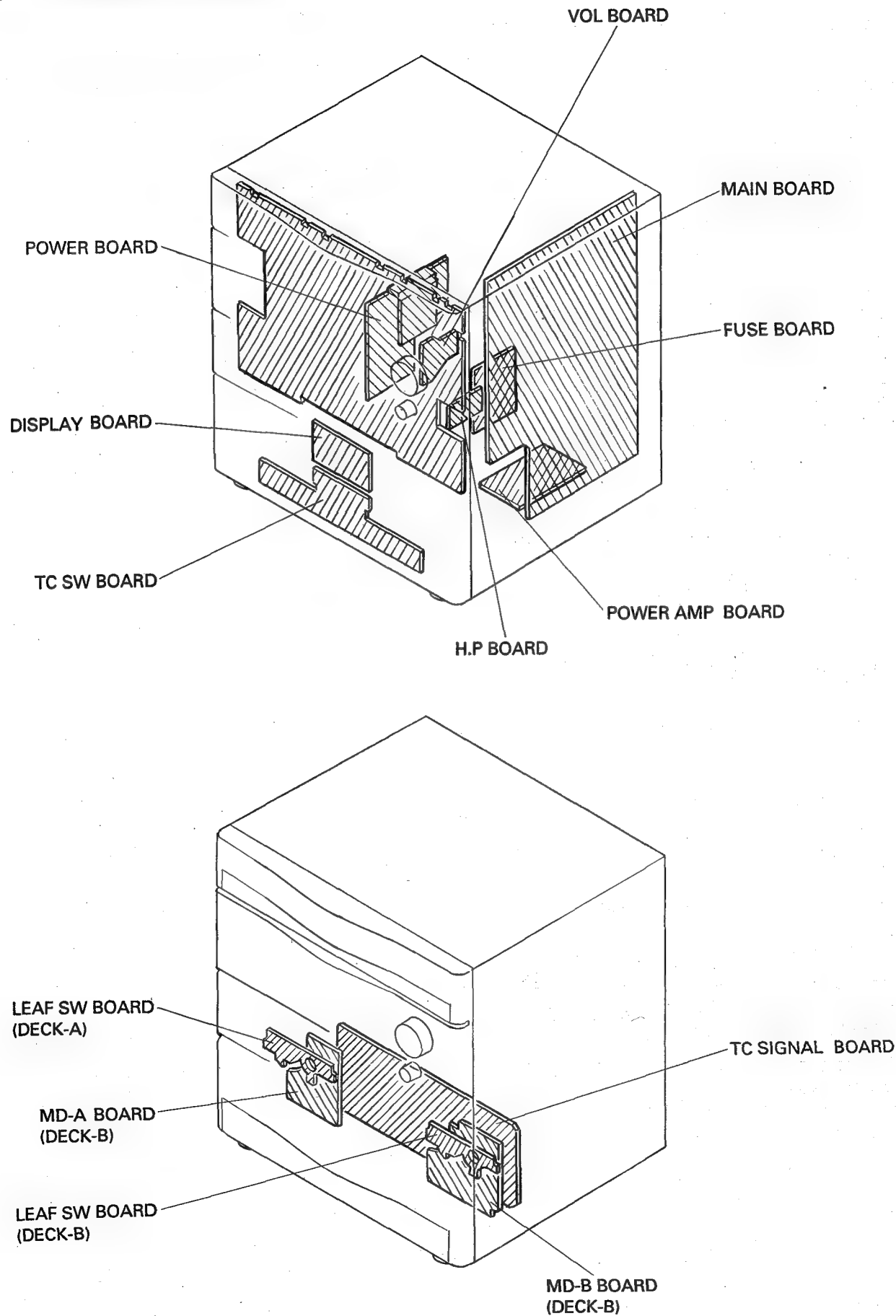
1. Tune the set to 216kHz.
2. Confirm that the loop antenna input level of 2.5mV (80dBμ/m) and no signal should not auto stop.

Adjustment Location :



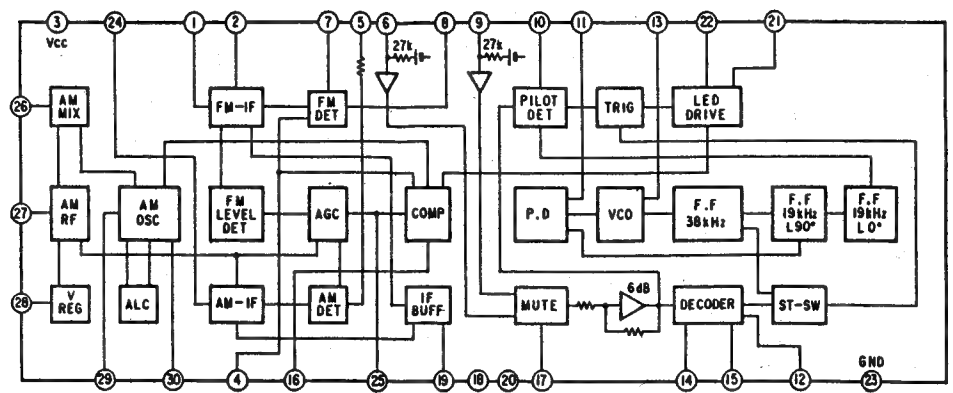
**SECTION 3
DIAGRAMS**

3-1. CIRCUIT BOARDS LOCATION

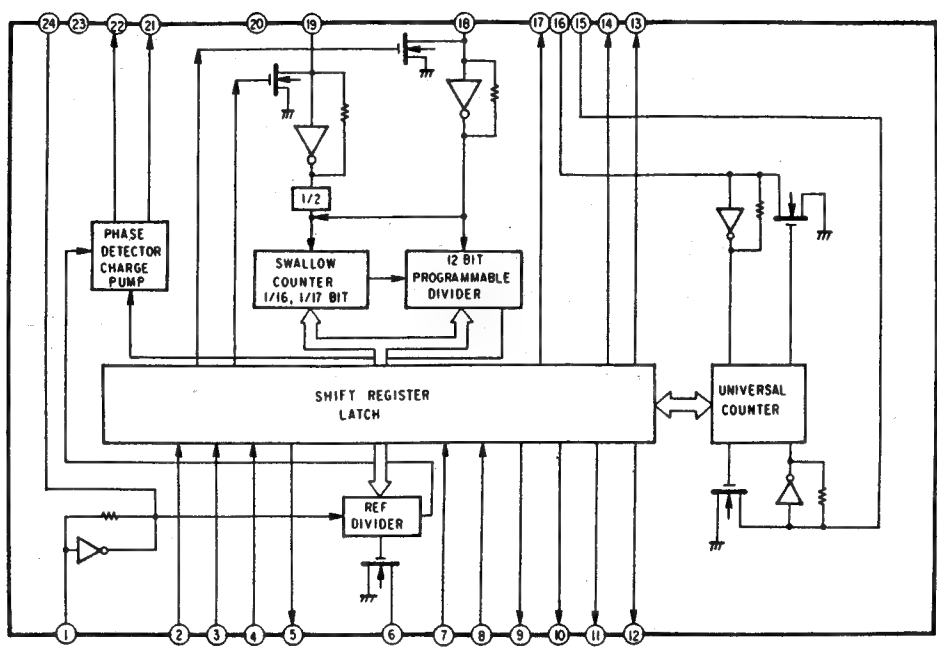


3-3. IC BLOCK DIAGRAMS

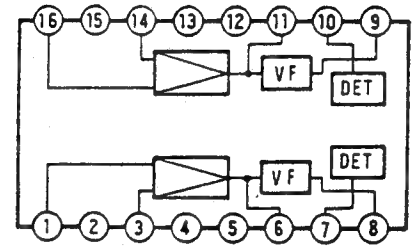
IC301 LA1851N



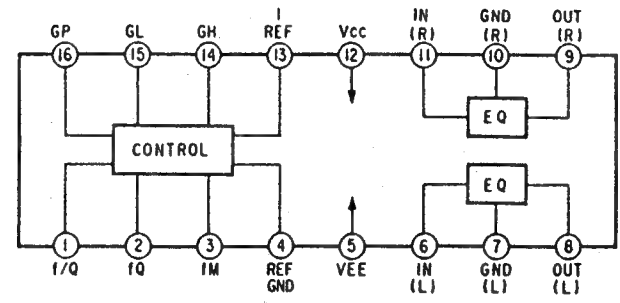
IC501 LC7218



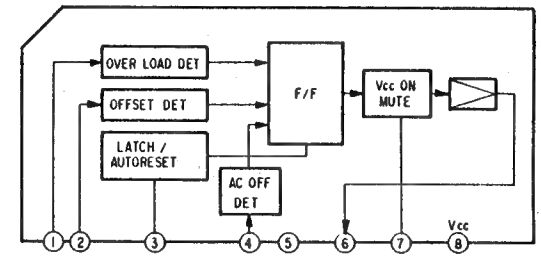
IC805 CXA1100P



IC806 CXA1198AP

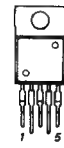


IC1202 μ1237HA

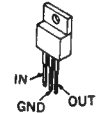


3-4. SEMICONDUCTOR LEAD LAYOUTS

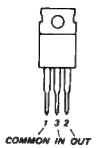
L78MR06



M5F7805L
M5F7807
M5F7812L



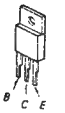
M5F7907



DTA114ES
DTA124ES
DTC114ES
DTC124ES
DTC143TS
2SC2669-OY
2SC3622A-LK



2SD2012



2SA1175-HFE
2SC2785-HFE



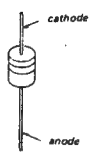
2SB1068-K
2SC945-P
2SC3112-B



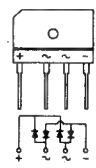
2SK246GR3



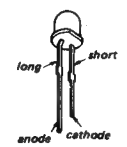
HZS6B1L
HZS7C2L
HZS33-1L
1N4148M
11ES2



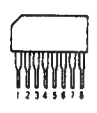
RBA-402



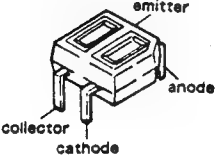
SEL2210S
SEL2410E-D
SEL2810A-C



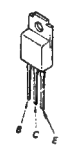
μPC1237HA



NJL5165K-B



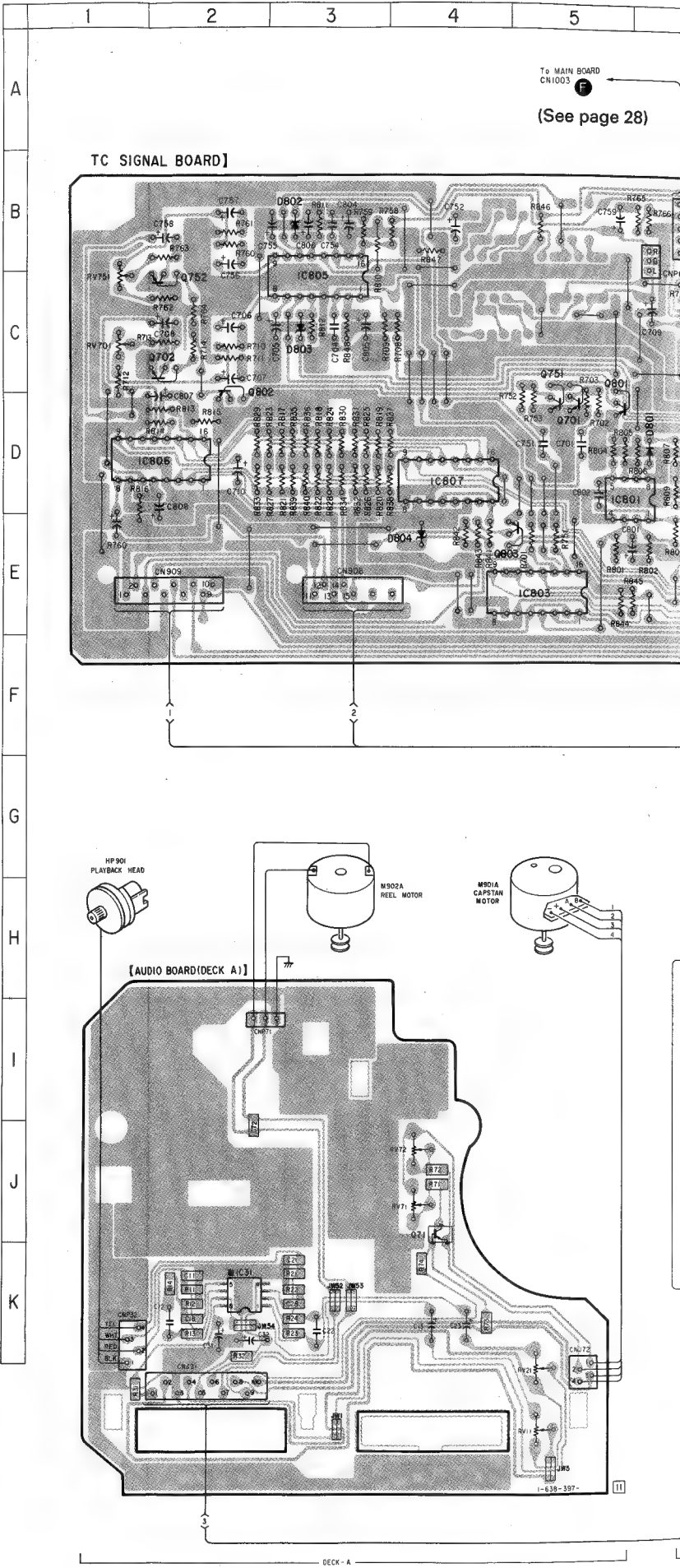
2SB1375

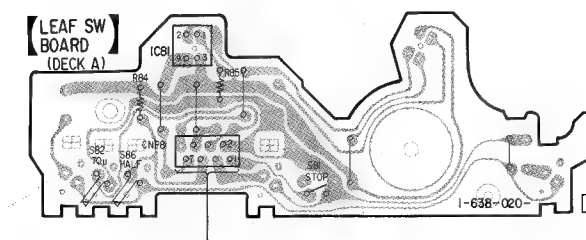
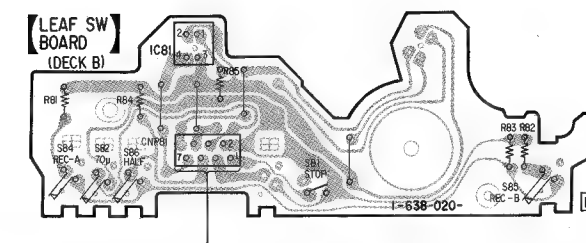
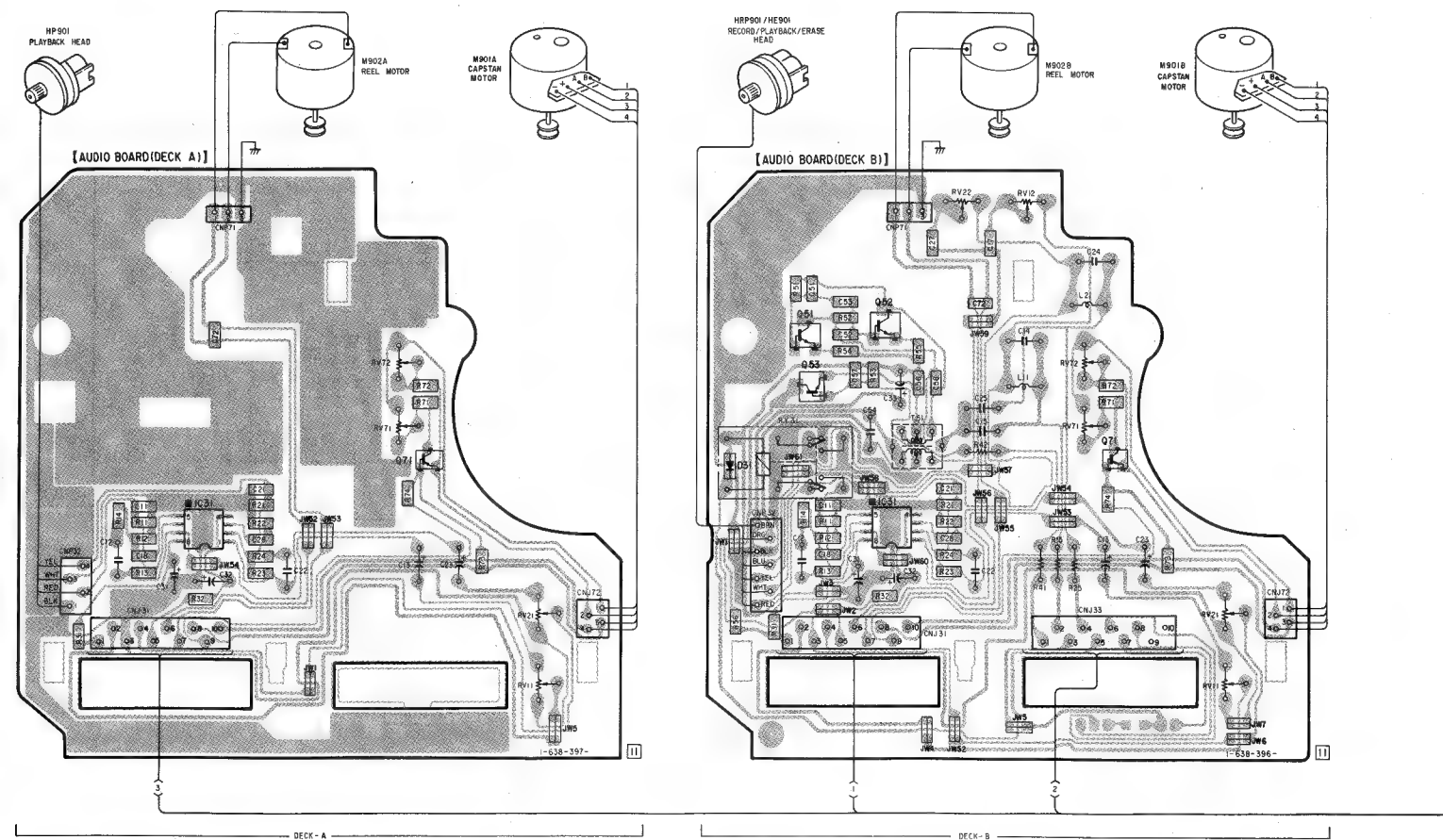
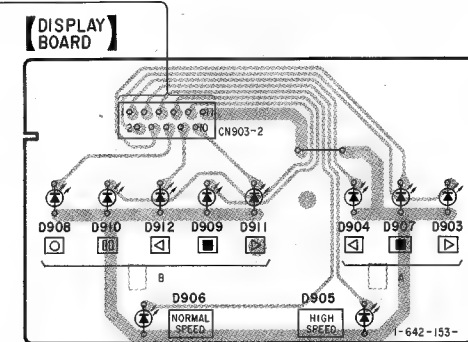
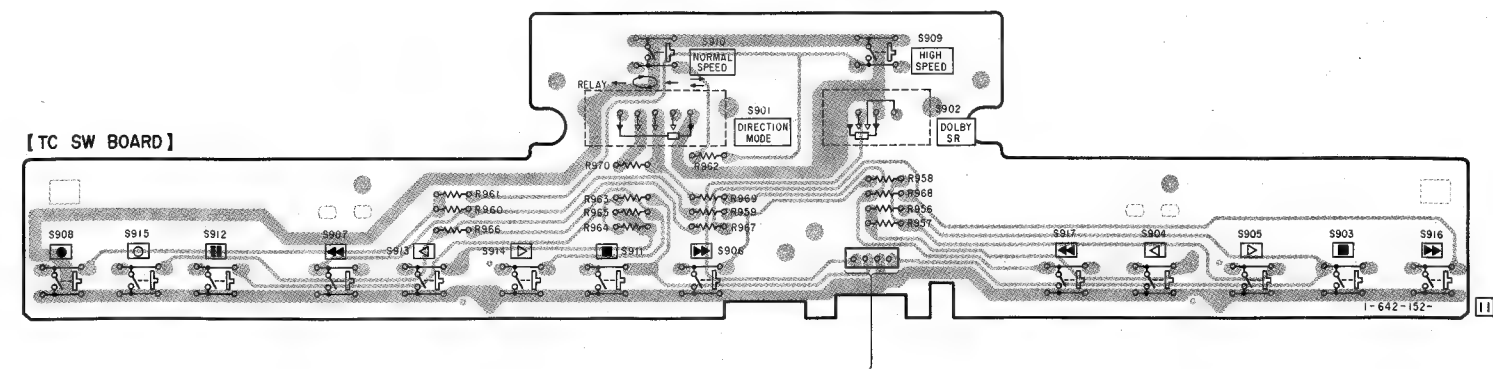
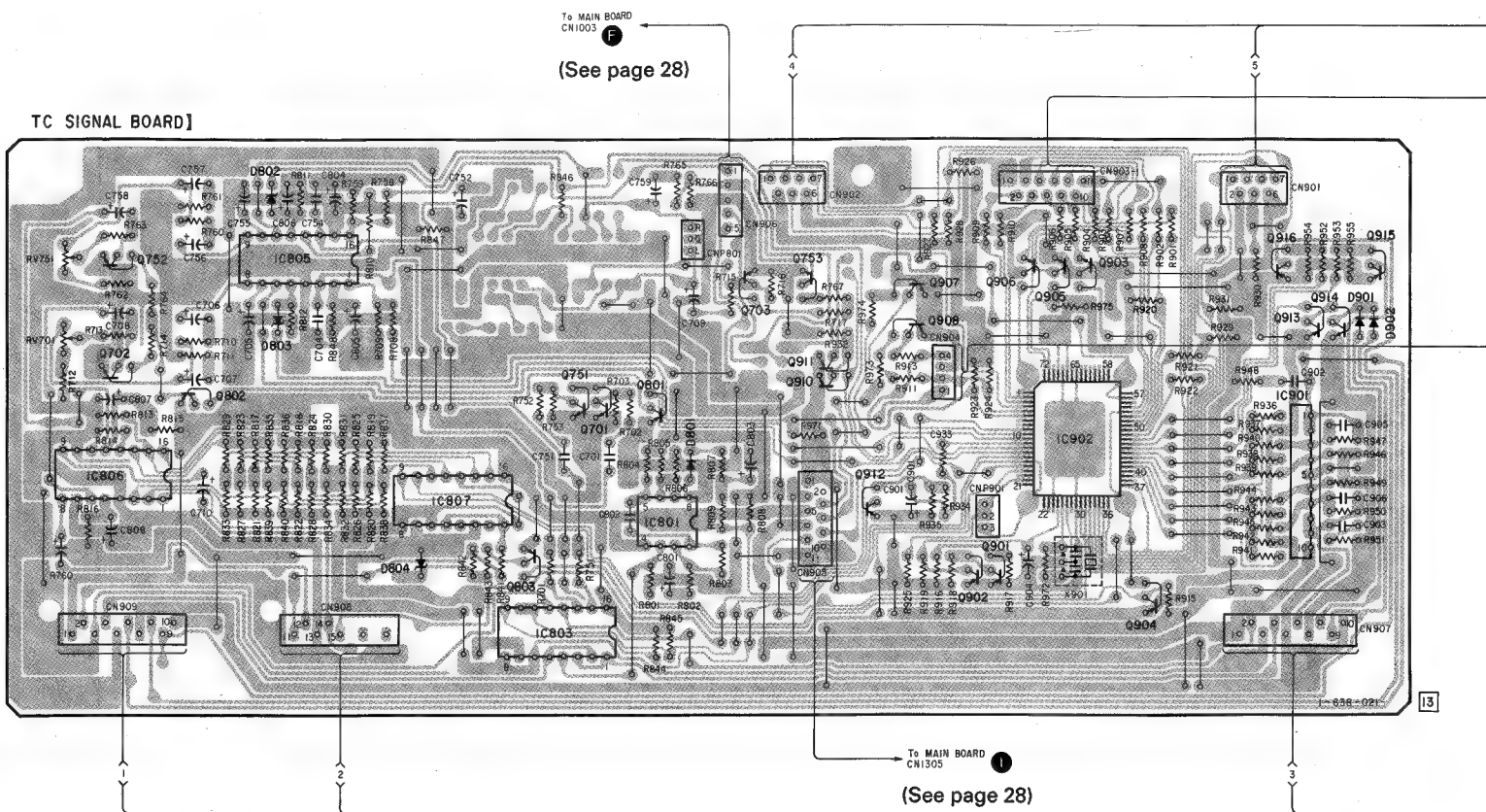


● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D31	J-6	Q51	I-7
D801	D-6	Q52	I-7
D802	B-3	Q53	J-7
D803	C-3	Q71	J-4 (MD-A)
D804	E-4	Q71	J-9 (MD-B)
D901	C-10	Q701	D-5
D902	C-10	Q702	C-2
D903	E-17	Q703	C-6
D904	E-17	Q751	D-5
D905	F-17	Q752	C-2
D906	F-15	Q753	C-6
D907	E-17	Q801	D-5
D908	E-15	Q802	C-2
D909	E-16	Q803	E-4
D910	E-15	Q901	E-8
D911	E-16	Q902	E-8
D912	E-15	Q903	C-8
		Q904	E-9
IC31	K-2 (MD-A)	Q905	C-8
IC31	K-7 (MD-B)	Q906	C-8
IC81	K-16 (DECK A)		
IC81	H-16 (DECK B)	Q907	C-7
IC801	D-5	Q908	C-7
		Q910	C-7
IC803	E-5	Q911	C-7
IC805	C-3	Q912	D-7
IC806	D-2		
IC807	D-4	Q913	C-10
IC901	D-10	Q914	C-10
		Q915	C-10
IC902	D-8	Q916	C-10

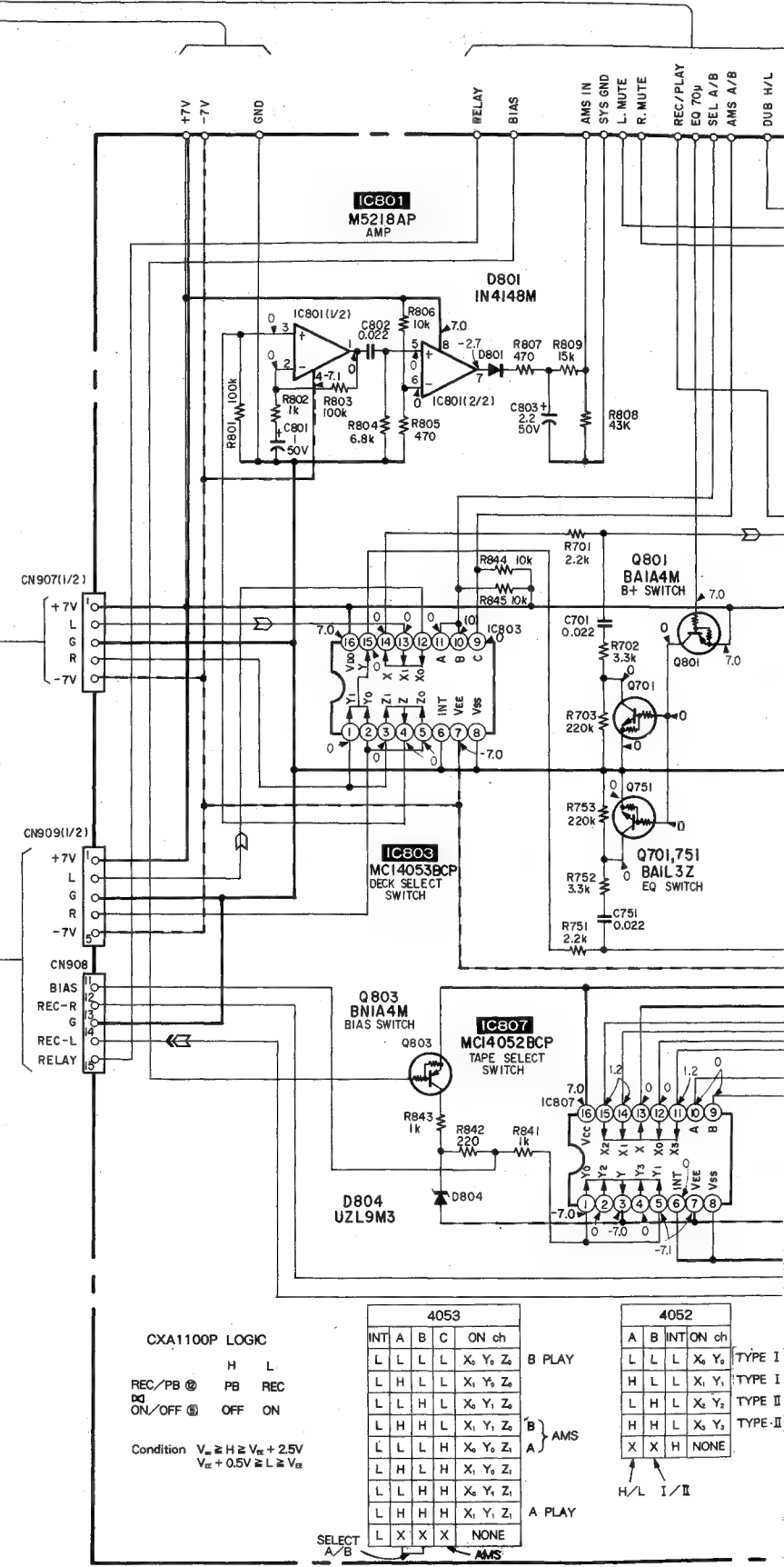
- Note:
- — : Indicated a lead wire mounted on the component side
 - : Parts mounted on the conductor side
 - : Indicates side identified with part number
 - : Through hole
 - ▨ : Pattern from the side which enables seeing
-
- G : Germany Model
 - IT : Italian Model
 - EE : East European Model

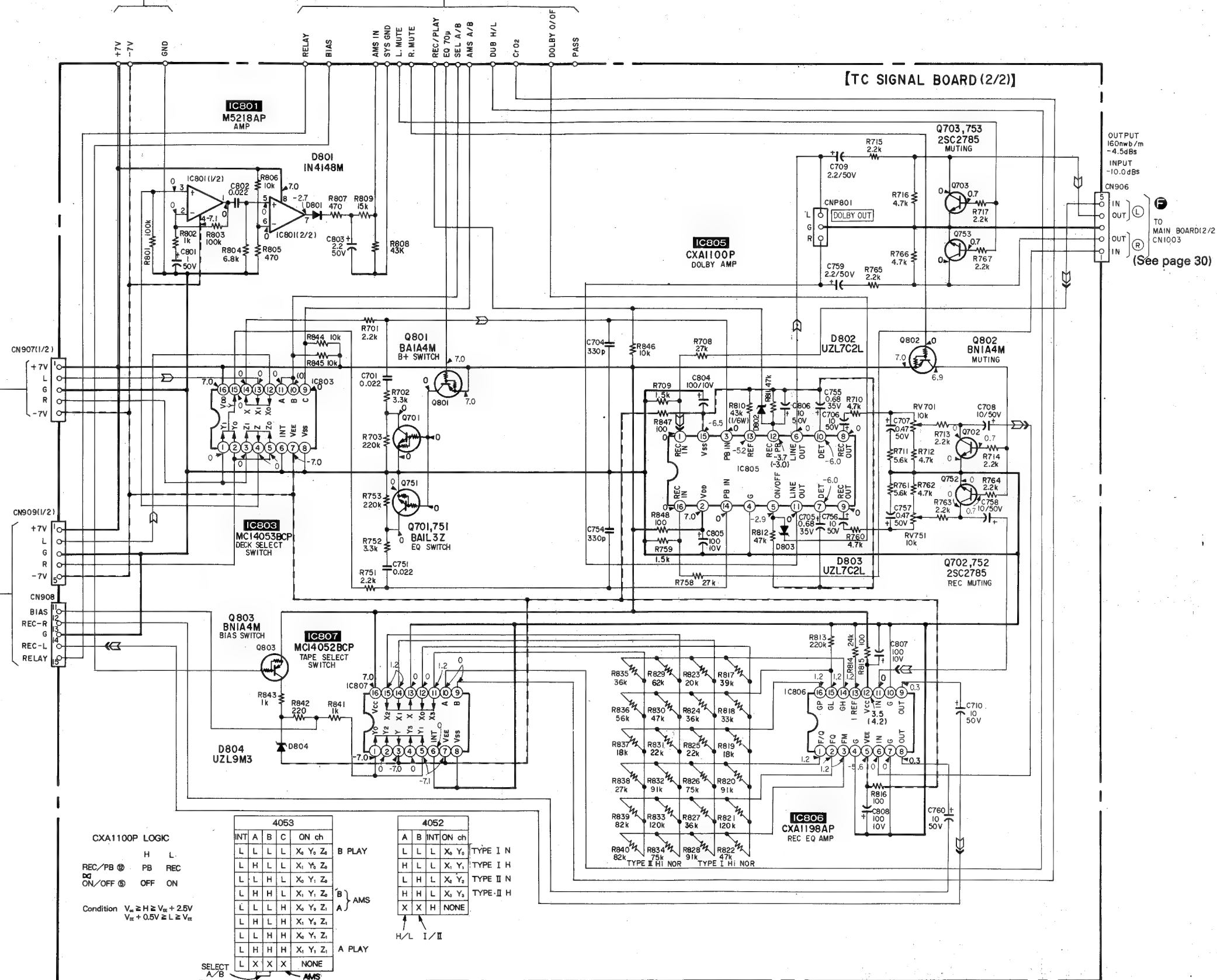


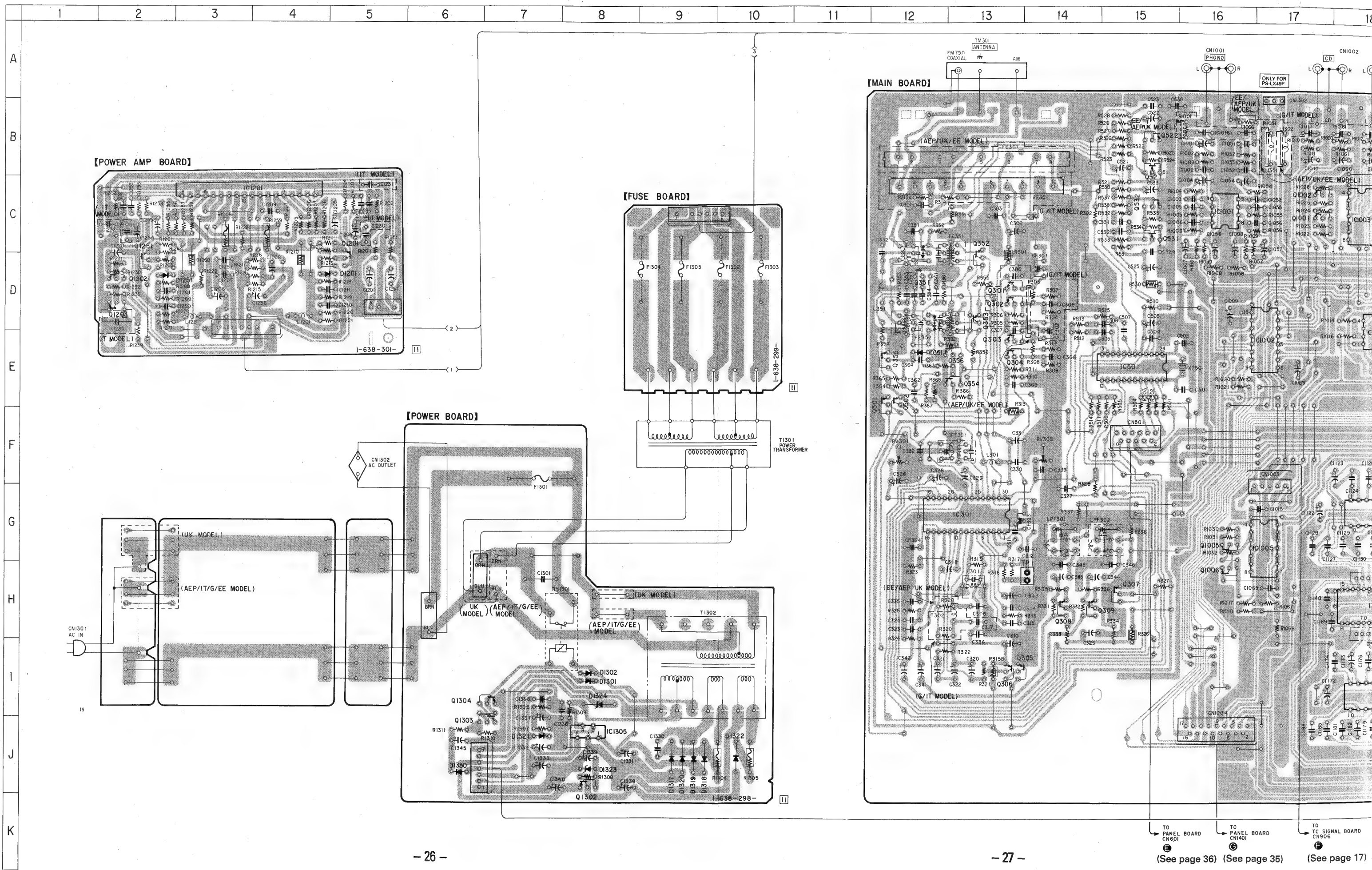


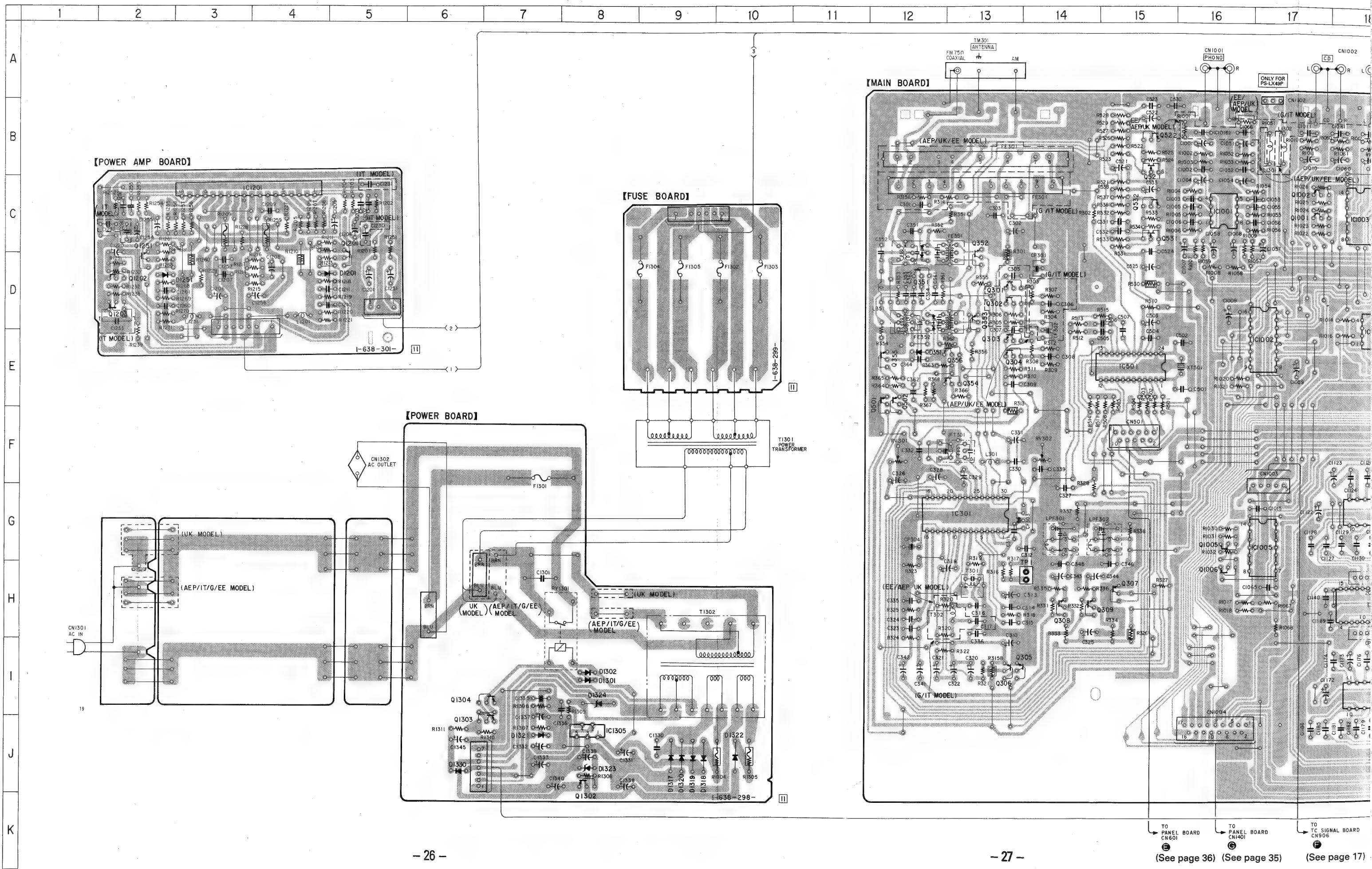
The schematic diagram is organized into several main sections, each representing a different board in the VCR assembly:

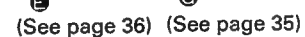
- [LEAF SW BOARD] (DECK A)**: This board contains a photo sensor (IC81, NJL5165K-B) and switches (S81, S82, S86) for deck A. It connects to a 7-pin connector (CNP81).
- [MD-A BOARD] (DECK A)**: This board features a pre-amp (IC31, μ PC4570G2) and a motor (M902A, REEL MOTOR). It includes various resistors (R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, R134, R135, R136, R137, R138, R139, R140, R141, R142, R143, R144, R145, R146, R147, R148, R149, R150, R151, R152, R153, R154, R155, R156, R157, R158, R159, R160, R161, R162, R163, R164, R165, R166, R167, R168, R169, R170, R171, R172, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R189, R190, R191, R192, R193, R194, R195, R196, R197, R198, R199, R200, R201, R202, R203, R204, R205, R206, R207, R208, R209, R210, R211, R212, R213, R214, R215, R216, R217, R218, R219, R220, R221, R222, R223, R224, R225, R226, R227, R228, R229, R230, R231, R232, R233, R234, R235, R236, R237, R238, R239, R240, R241, R242, R243, R244, R245, R246, R247, R248, R249, R250, R251, R252, R253, R254, R255, R256, R257, R258, R259, R260, R261, R262, R263, R264, R265, R266, R267, R268, R269, R270, R271, R272, R273, R274, R275, R276, R277, R278, R279, R280, R281, R282, R283, R284, R285, R286, R287, R288, R289, R290, R291, R292, R293, R294, R295, R296, R297, R298, R299, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R313, R314, R315, R316, R317, R318, R319, R320, R321, R322, R323, R324, R325, R326, R327, R328, R329, R330, R331, R332, R333, R334, R335, R336, R337, R338, R339, R340, R341, R342, R343, R344, R345, R346, R347, R348, R349, R350, R351, R352, R353, R354, R355, R356, R357, R358, R359, R360, R361, R362, R363, R364, R365, R366, R367, R368, R369, R370, R371, R372, R373, R374, R375, R376, R377, R378, R379, R380, R381, R382, R383, R384, R385, R386, R387, R388, R389, R390, R391, R392, R393, R394, R395, R396, R397, R398, R399, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412, R413, R414, R415, R416, R417, R418, R419, R420, R421, R422, R423, R424, R425, R426, R427, R428, R429, R430, R431, R432, R433, R434, R435, R436, R437, R438, R439, R440, R441, R442, R443, R444, R445, R446, R447, R448, R449, R450, R451, R452, R453, R454, R455, R456, R457, R458, R459, R460, R461, R462, R463, R464, R465, R466, R467, R468, R469, R470, R471, R472, R473, R474, R475, R476, R477, R478, R479, R480, R481, R482, R483, R484, R485, R486, R487, R488, R489, R490, R491, R492, R493, R494, R495, R496, R497, R498, R499, R500, R501, R502, R503, R504, R505, R506, R507, R508, R509, R510, R511, R512, R513, R514, R515, R516, R517, R518, R519, R520, R521, R522, R523, R524, R525, R526, R527, R528, R529, R530, R531, R532, R533, R534, R535, R536, R537, R538, R539, R540, R541, R542, R543, R544, R545, R546, R547, R548, R549, R550, R551, R552, R553, R554, R555, R556, R557, R558, R559, R560, R561, R562, R563, R564, R565, R566, R567, R568, R569, R570, R571, R572, R573, R574, R575, R576, R577, R578, R579, R580, R581, R582, R583, R584, R585, R586, R587, R588, R589, R590, R591, R592, R593, R594, R595, R596, R597, R598, R599, R600, R601, R602, R603, R604, R605, R606, R607, R608, R609, R610, R611, R612, R613, R614, R615, R616, R617, R618, R619, R620, R621, R622, R623, R624, R625, R626, R627, R628, R629, R630, R631, R632, R633, R634, R635, R636, R637, R638, R639, R640, R641, R642, R643, R644, R645, R646, R647, R648, R649, R650, R651, R652, R653, R654, R655, R656, R657, R658, R659, R660, R661, R662, R663, R664, R665, R666, R667, R668, R669, R670, R671, R672, R673, R674, R675, R676, R677, R678, R679, R680, R681, R682, R683, R684, R685, R686, R687, R688, R689, R690, R691, R692, R693, R694, R695, R696, R697, R698, R699, R700, R701, R702, R703, R704, R705, R706, R707, R708, R709, R710, R711, R712, R713, R714, R715, R716, R717, R718, R719, R720, R721, R722, R723, R724, R725, R726, R727, R728, R729, R730, R731, R732, R733, R734, R735, R736, R737, R738, R739, R740, R741, R742, R743, R744, R745, R746, R747, R748, R749, R750, R751, R752, R753, R754, R755, R756, R757, R758, R759, R760, R761, R762, R763, R764, R765, R766, R767, R768, R769, R770, R771, R772, R773, R774, R775, R776, R777, R778, R779, R780, R781, R782, R783, R784, R785, R786, R787, R788, R789, R790, R791, R792, R793, R794, R795, R796, R797, R7



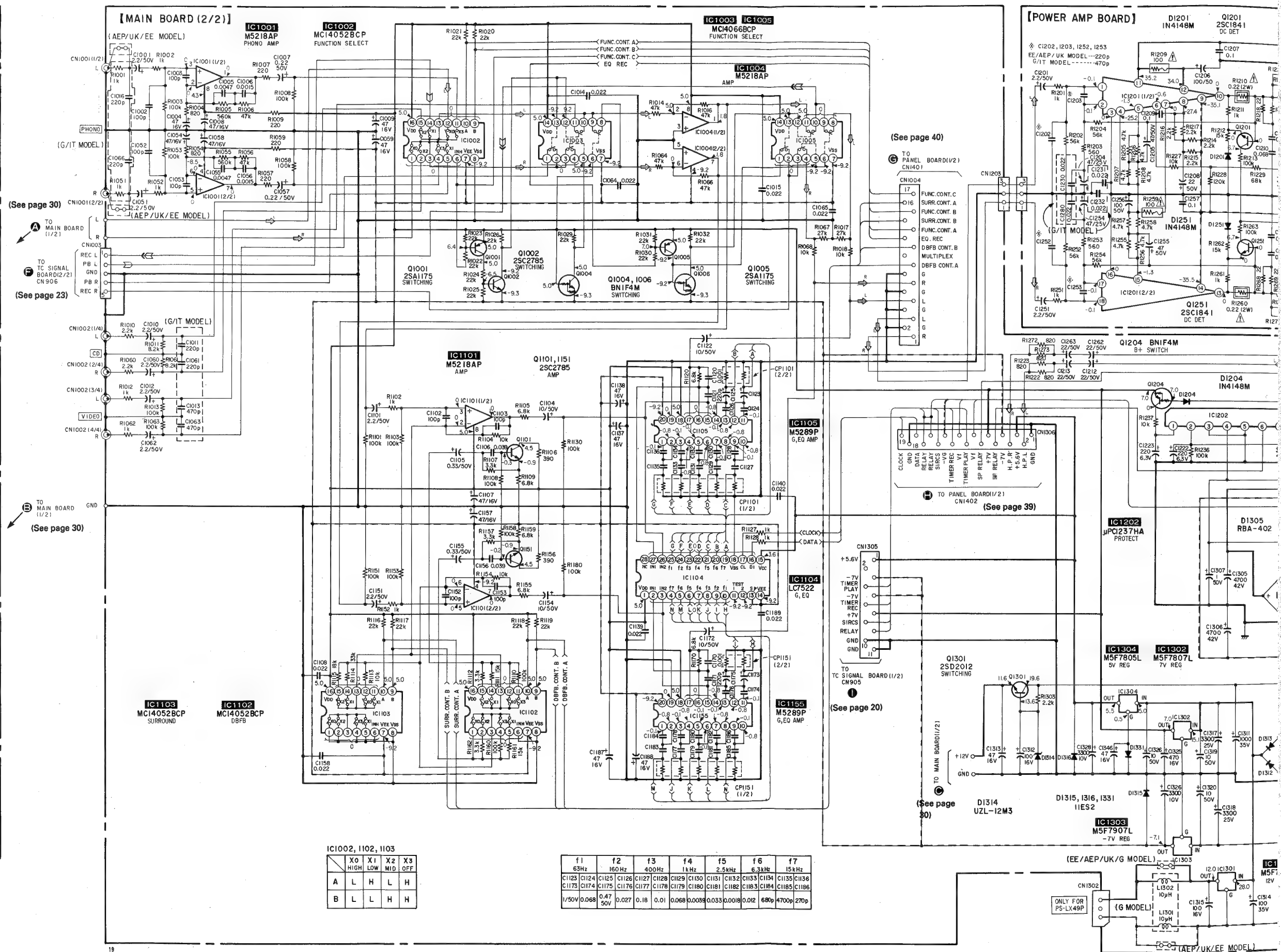








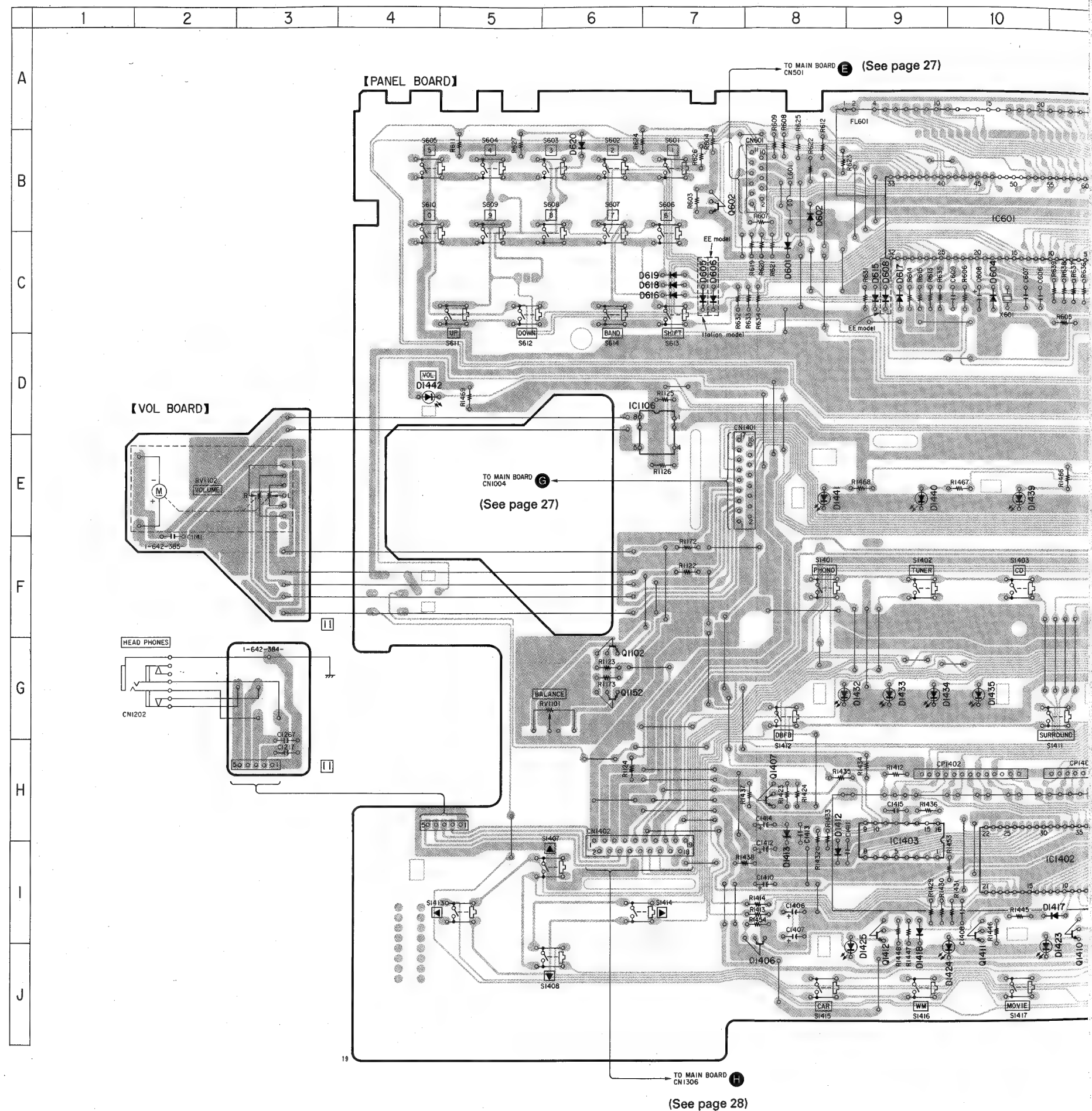
(See page 17)

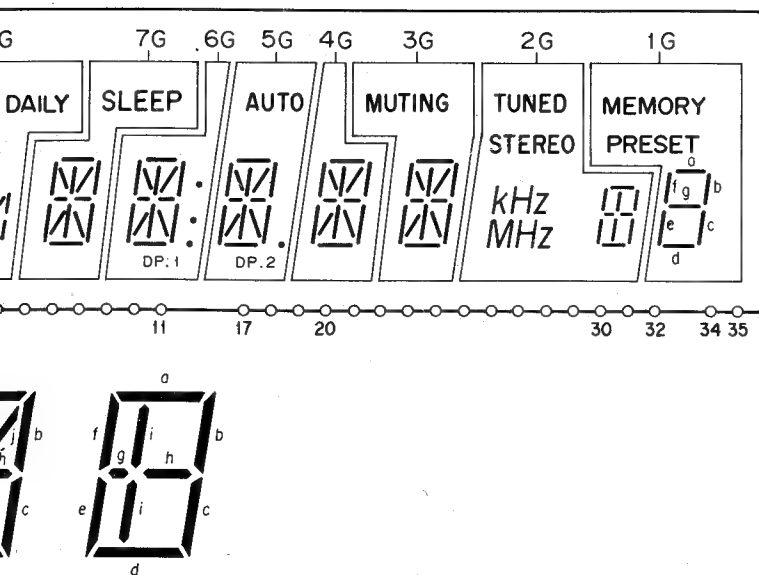


3-9. PRINTED WIRING BOARDS - PANEL SECTION -

● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D601	C-8	D1426	I-15
D602	B-8	D1427	I-16
D603	B-12	D1428	G-11
D604	C-10	D1429	G-12
D605	C-7 (IT)	D1430	G-12
D606	C-7 (EE)	D1431	G-12
D608	C-9 (EE)	D1432	G-8
D609	C-12	D1433	G-9
D610	C-12	D1434	G-9
D612	C-13	D1435	G-10
D613	B-13	D1436	J-15
D614	B-13	D1437	E-12
D615	C-9	D1438	E-11
D616	C-7	D1439	E-10
D617	C-9	D1440	E-9
D618	C-7	D1441	E-8
D619	C-7	D1442	D-4
D620	B-6	D1443	J-14
D621	C-12		
D1401	F-14	IC601	B-10
		IC602	C-15
D1402	F-11	IC1106	D-7
D1403	F-12	IC1401	G-14
D1404	E-14	IC1402	I-11
D1405	H-14		
D1406	H-16	IC1403	H-9
		IC1404	F-13
D1407	I-14		
D1408	I-14	Q601	C-14
D1409	I-14	Q602	B-7
D1410	I-16	Q1102	G-6
D1411	H-16	Q1152	G-6
		Q1401	H-14
D1412	I-8		
D1413	H-8	Q1402	E-15
D1414	I-12	Q1403	F-15
D1415	I-11	Q1404	F-14
D1416	I-11	Q1405	F-14
		Q1406	I-8
D1417	I-11		
D1418	I-9	Q1407	H-8
D1419	I-14	Q1408	I-12
D1420	I-16	Q1409	I-12
D1421	I-12	Q1410	I-11
		Q1411	I-10
D1422	I-11		
D1423	I-10	Q1412	I-9
D1424	I-10	Q1413	I-15
D1425	I-9	Q1414	I-16





Note:

- : Indicated a lead wire mounted on the component side
- : Parts mounted on the conductor side
- : Indicates side identified with part number
- : Through hole
- ▨: Pattern from the side which enables seeing

G : Germany Model
IT : Italian Model
EE : East European Model

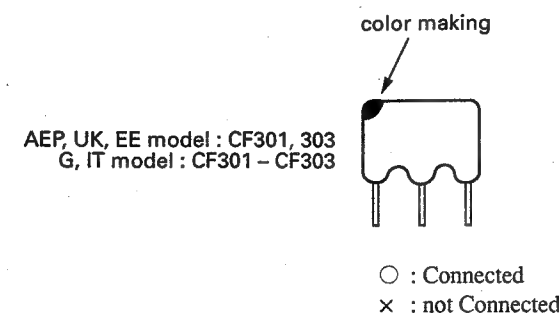
- Note:
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
 - All resistors are in ohms, 1/4W or less unless otherwise noted.
 - : Nonflammable resistor
 - : Fuse resistor

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

- : B+ Line
- : B- Line
- : Adjustment for repair
- Voltage are dc with respect to ground under no-signal (STOP) conditions.
- No mark : Stop, FM
- () : PB
- < > : REC
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path
 - : FM
 - : REC (DECK B)
 - : PB (DECK A)
 - : PB (DECK B)
- G : Germany Model
- IT : Italian Model
- EE : East European Model

Note on Ceramic Filter Replacement.

This set employs two or three ceramic filters (CF301 – CF303) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by jumpers (*A, *B) is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.



Ceramic filter		Mount		FM intermediate frequency (MHz)
Color mark	Center frequency (MHz)	IF-50K *B	IF+50K *A	
white	10.750	×	○	10.750
Red	10.700	×	×	10.700
Black	10.650	○	×	10.350

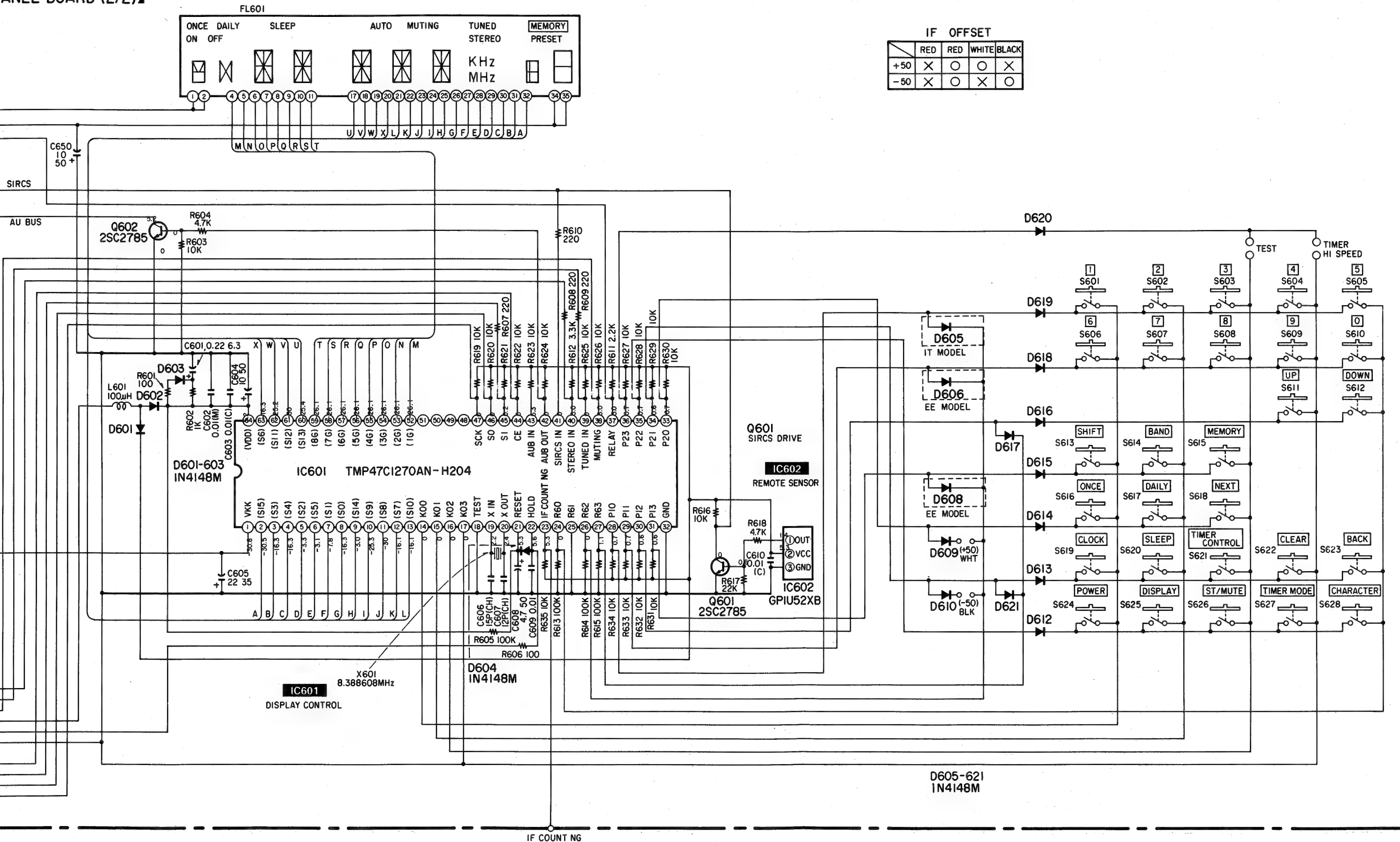
FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i. e. of same color coding, should be used for CF301 – CF303.

When replacing the ceramic filters, perform the FM Di-scriminator Adjustment.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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PANEL BOARD (2/2)



SECTION 4 EXPLODED VIEWS

NOTE:

- XX, -X mean standardized parts, so they may have some differences from the original one.

Color Indication of Appearance Parts

Example:

KNOB,BALANCE(WHITE)...(RED)

↑ ↑
Parts color Cabinet's color

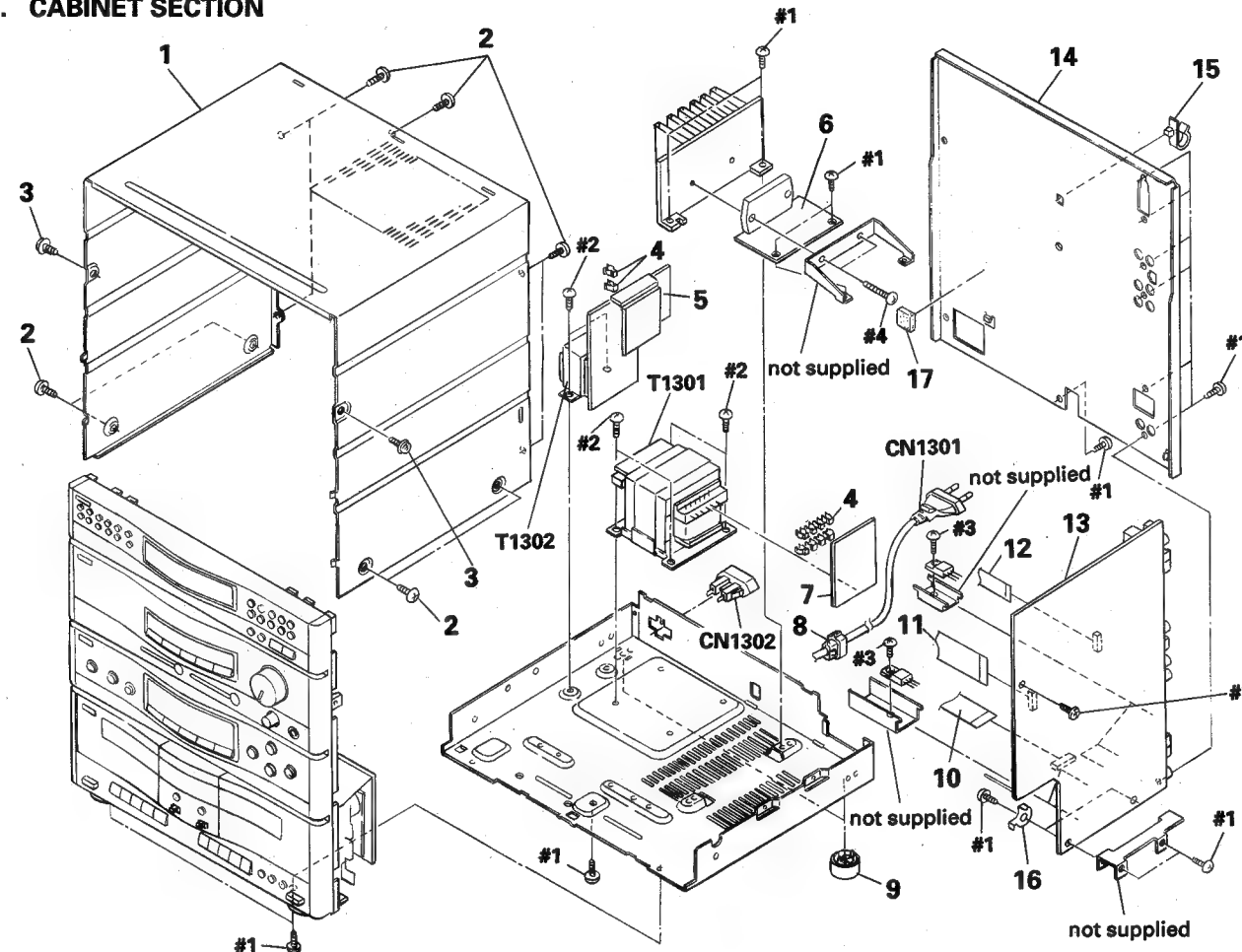
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

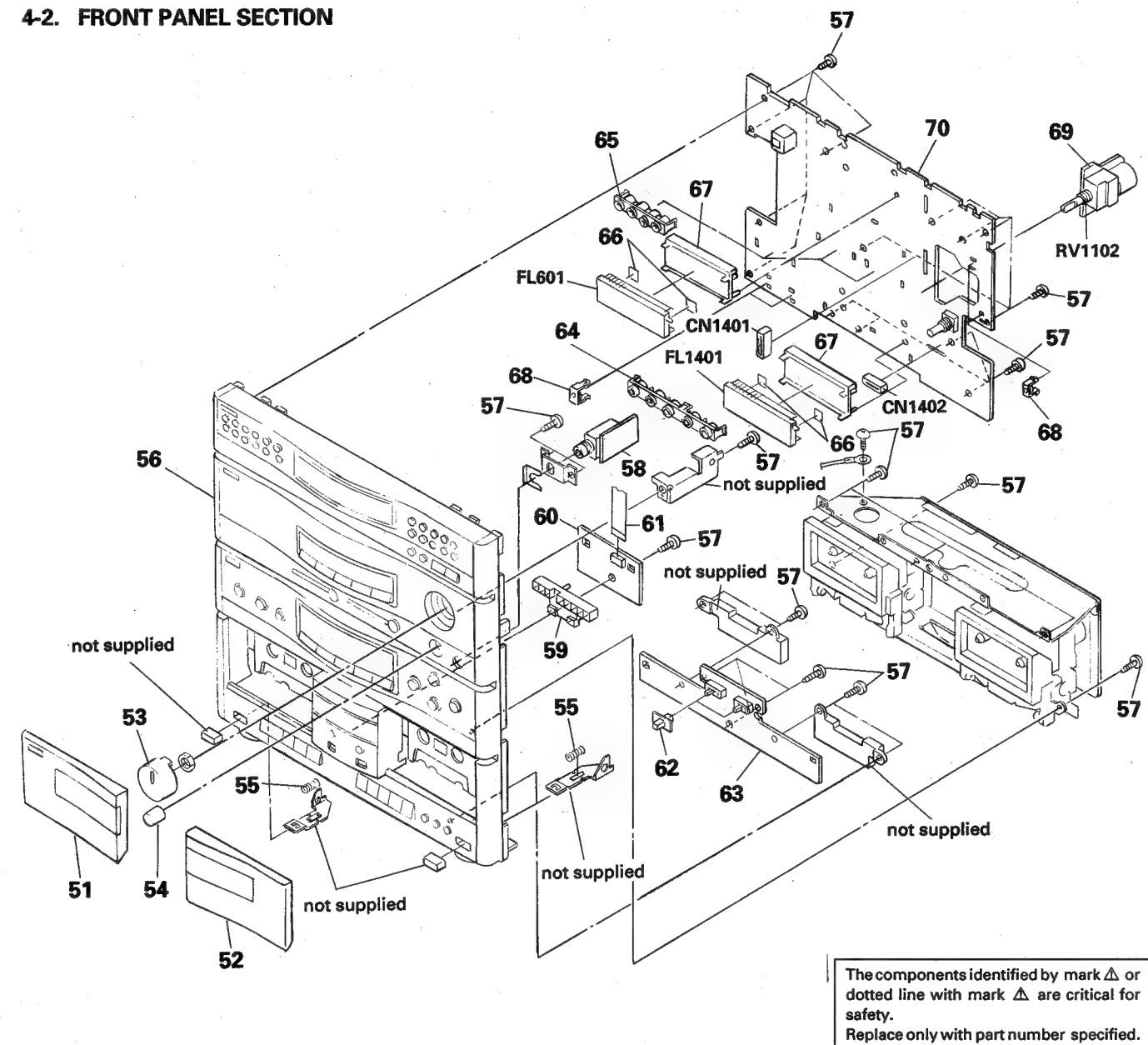
- G : Germany Model
- IT : Italian Model
- EE : East European Model

4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* 1	4-943-170-11	CASE (AEP, UK, G, EE)		* 13	A-4347-612-A	MAIN BOARD, COMPLETE (EE)	
* 1	4-943-170-52	CASE (IT)		* 14	4-948-288-01	PANEL, BACK (UK)	
2	4-929-973-01	SCREW (CASE, 3 POINT)		* 14	4-948-288-11	PANEL, BACK (AEP)	
3	3-363-099-01	SCREW (CASE +3X8 TP2)		* 14	4-948-288-21	PANEL, BACK (AEP)	
4	1-533-217-31	HOLDER, FUSE		* 14	4-948-288-31	PANEL, BACK (G)	
* 5	1-638-298-11	POWER BOARD		* 14	4-948-288-41	PANEL, BACK (IT)	
				* 14	4-948-288-51	PANEL, BACK (EE)	
* 6	A-4347-231-A	POWER AMP BOARD, COMPLETE (AEP, UK, EE)		* 15	4-949-235-01	HOOK	
* 6	A-4347-370-A	POWER AMP BOARD, COMPLETE (G, IT)		* 16	4-942-204-01	PLATE, GROUND	
* 7	1-638-299-11	FUSE BOARD		* 17	3-339-466-01	SPACER (HA)	
* 8	3-703-244-00	BUSHING (2104), CORD					
9	X-4941-228-1	FOOT ASSY					
* 10	1-690-948-11	WIRE (FLAT TYPE) (19 CORE)		Δ CN1301	1-575-651-61	CORD, POWER (AEP, G, IT, EE1)	
11	1-590-577-11	WIRE, FLAT TYPE (17 CORE)		Δ CN1301	1-575-652-21	CORD, POWER (UK)	
12	1-590-576-11	WIRE, FLAT TYPE (11 CORE)		Δ CN1302	1-526-751-00	OUTLET, AC (UK)	
* 13	A-4347-228-A	MAIN BOARD, COMPLETE (AEP, UK)		Δ CN1302	1-526-794-11	OUTLET, AC (AEP, G, IT, EE)	
* 13	A-4347-367-A	MAIN BOARD, COMPLETE (G, IT)		Δ T1301	1-450-787-11	TRANSFORMER, POWER	
				Δ T1302	1-450-397-21	TRANSFORMER, POWER	

4-2. FRONT PANEL SECTION

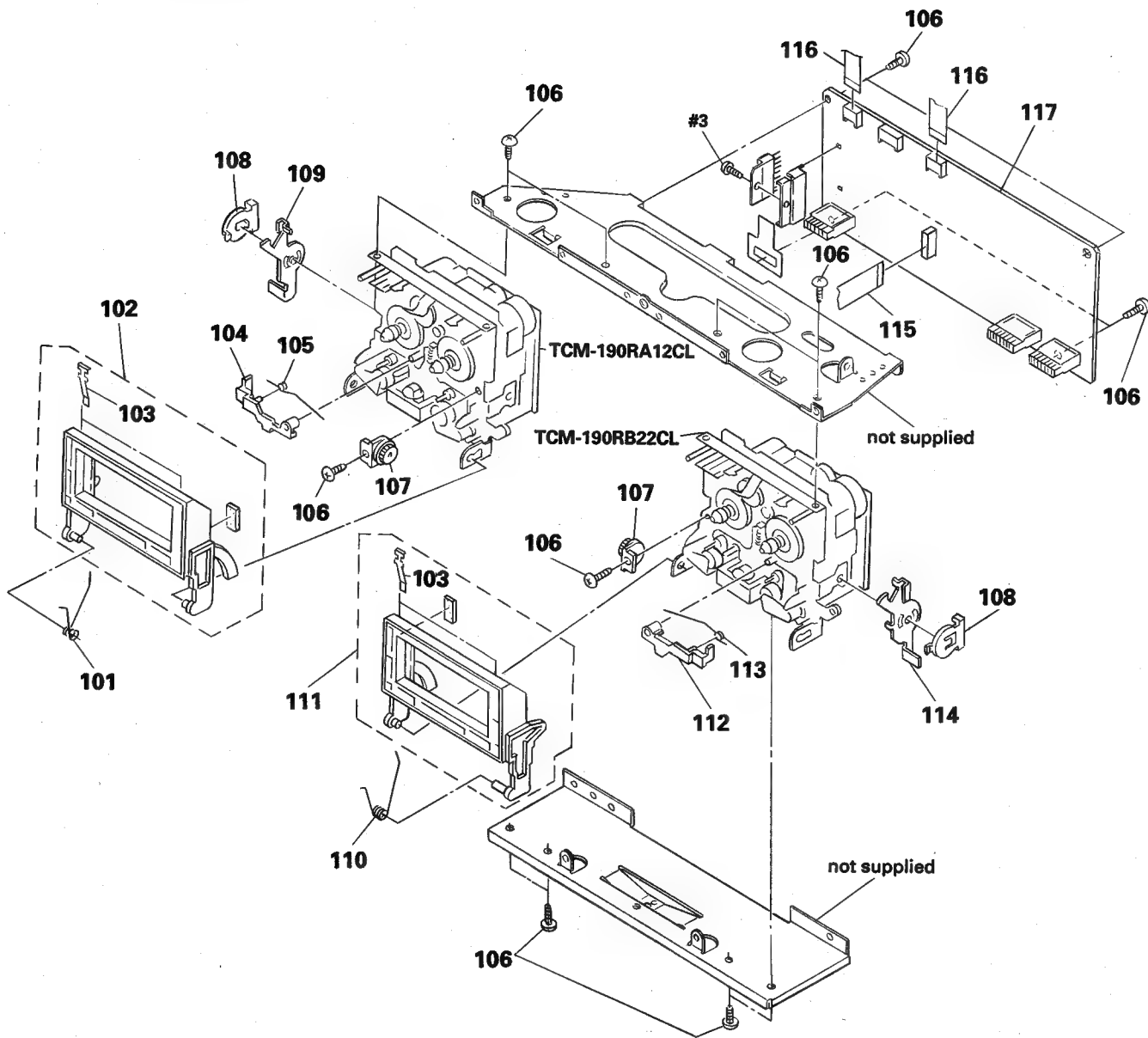


The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	A-4325-456-A	LID (A) ASSY, CASSETTE (AEP, UK, G, EE)		* 63	1-642-152-11	TC SW BOARD	
51	A-4325-521-A	LID (A) ASSY, CASSETTE (IT)		* 64	4-948-247-01	HOLDER (FU), LED	
52	A-4325-457-A	LID (B) ASSY, CASSETTE (AEP, UK, G, EE)		* 65	4-948-248-01	HOLDER (DS), LED	
52	A-4325-522-A	LID (B) ASSY, CASSETTE (IT)		* 66	4-949-935-01	CUSHION (FL)	
53	A-4323-382-A	KNOB (VO) ASSY		* 67	4-942-301-01	HOLDER, FL TUBE	
54	4-948-270-01	KNOB (DSB)		* 68	4-930-781-11	HOLDER (VO), LED	
55	3-500-131-00	SPRING, COMPRESSION		* 69	1-162-385-11	VOL. BOARD	
56	A-4325-458-A	PANEL ASSY, FRONT (AEP, UK, G, EE)		* 70	A-4347-232-A	PANEL BOARD, COMPLETE (AEP, UK, G)	
56	A-4325-523-A	PANEL ASSY, FRONT (IT)		* 70	A-4347-371-A	PANEL BOARD, COMPLETE (IT)	
57	4-928-635-01	SCREW, +BV (2.6X8) TAPPING		* 70	A-4347-614-A	PANEL BOARD, COMPLETE (EE)	
* 58	1-642-384-11	H. P. BOARD		* CN1401	1-568-836-11	SOCKET, CONNECTOR 17P	
* 59	4-948-246-01	HOLDER (TC), LED		CN1402	1-568-802-11	SOCKET, CONNECTOR 19P	
* 60	1-642-153-11	DISPLAY BOARD		FL601	1-519-732-11	INDICATOR TUBE, FLUORESCENT	
61	1-590-575-11	WIRE, FLAT TYPE (11 CORE)		FL1401	1-519-648-21	INDICATOR TUBE, FLUORESCENT	
62	4-948-273-01	KNOB, SLIDE		RV1102	1-241-350-11	RES, VAR, CARBON 100K/100K (VOLUME)	

4-3. MECHANISM SECTION 1

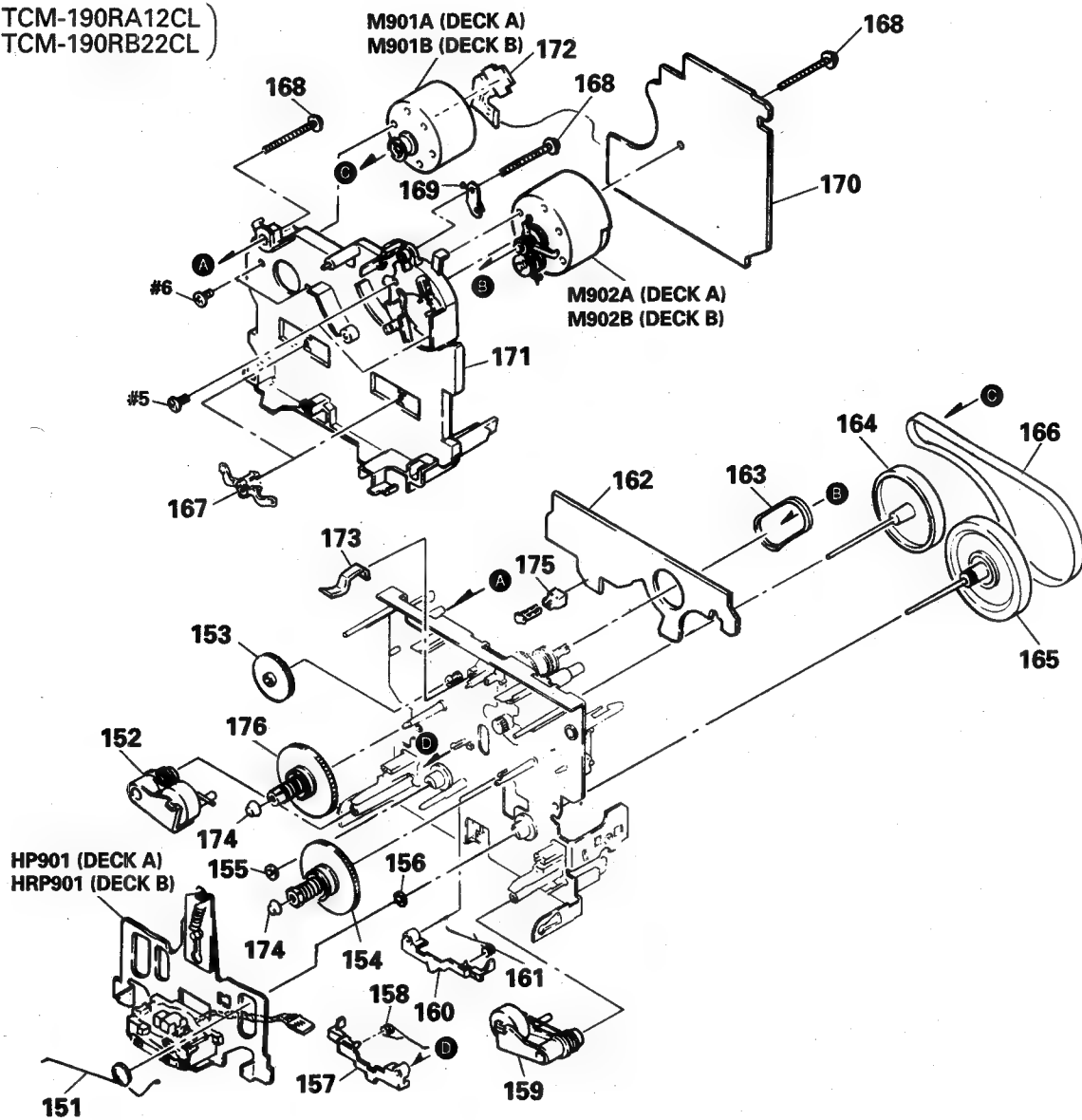
(TCM-190RA12CL
TCM-190RB22CL)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	3-354-959-01	SPRING (LOADING L), TORSION		110	3-354-960-01	SPRING (LOADING R), TORSION	
102	A-4325-163-A	HOLDER (L) ASSY, CASSETTE		111	A-4325-164-A	HOLDER (R) ASSY, CASSETTE	
103	3-308-823-11	SPRING		112	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
104	3-354-955-01	LEVER (EJ SAFTY LEVER L)		113	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
105	3-354-961-01	SPRING (EJ SAFTY SPRING L)		* 114	3-354-954-01	LEVER (LOCK LEVER R)	
106	4-928-635-01	SCREW, +BV (2.6X8) TAPPING		115	1-590-459-11	WIRE, FLAT TYPE (11 CORE)	
107	3-354-963-01	DAMPER		116	1-590-574-11	WIRE, FLAT TYPE (7 CORE)	
108	3-354-957-01	JOINT (LOCK LEVER)		* 117	A-4347-227-A	TC SIGNAL BOARD, COMPLETE	
* 109	3-354-953-01	LEVER (LOCK LEVER L)					

4-4. MECHANISM SECTION 2

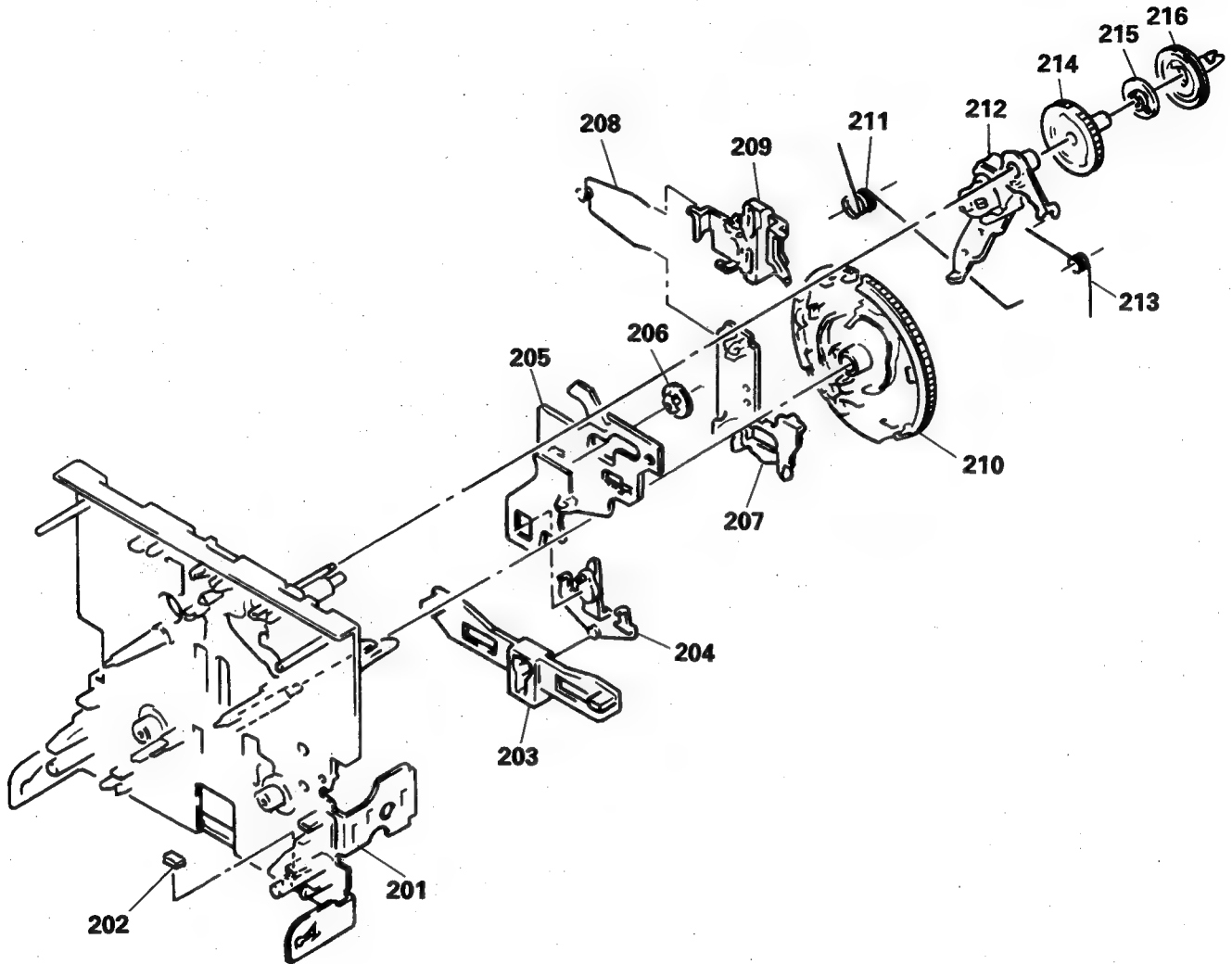
(TCM-190RA12CL
TCM-190RB22CL)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	3-359-455-01	SPRING, TORSION		167	3-575-321-00	RETAINER, THRUST, CAPSTAN	
152	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY		168	3-359-414-01	SCREW (+PTPH 2X23)	
153	3-359-424-01	GEAR (REV GEAR)		169	3-359-450-01	PLATE, GROUND	
154	X-3359-404-1	TABLE ASSY, REEL		* 170	A-2006-623-A	AUDIO BOARD, COMPLETE (DECK A)	
155	3-356-714-01	WASHER		* 170	A-2006-624-A	AUDIO BOARD, COMPLETE (DECK B)	
156	3-356-713-01	WASHER		* 171	3-359-436-11	BASE (THRUST RETAINER), FITTING	
157	3-354-956-01	LEVER (EJ SAFTY LEVER R)		172	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
158	3-354-962-01	SPRING (EJ SAFTY SPRING R)		173	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF	
159	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY		174	3-362-308-01	CAP (REEL)	
160	3-354-955-01	LEVER (EJ SAFTY LEVER L)		175	3-343-419-01	HOLDER (S SENSER A)	
161	3-354-961-01	SPRING (EJ SAFTY SPRING L)		176	X-3362-078-1	TABLE ASSY (B), REEL	
* 162	1-638-020-11	LEAF SW BOARD (DECK A)		* HRP901	A-2003-757-A	BASE ASSY, HEAD (DECK A)	
* 162	1-638-020-11	LEAF SW BOARD (DECK B)		HRP901	A-2003-930-A	BASE ASSY, HEAD (DECK B)	
163	3-359-466-01	BELT (FR), SQUARE		M901A	X-3359-417-1	MOTOR ASSY, CAPSTAN (DECK A)	
164	X-3359-410-1	FLYWHEEL (REV) ASSY		M901B	X-3359-417-1	MOTOR ASSY, CAPSTAN (DECK B)	
165	X-3364-554-1	FLYWHEEL (FWD) ASSY		M902A	X-3363-501-1	MOTOR ASSY, REEL (DECK A)	
166	3-359-417-01	BELT (FLAT), CAPSTAN		M902B	X-3363-501-1	MOTOR ASSY, REEL (DECK B)	

4-5. MECHANISM SECTION 3

(TCM-190RA12CL)
(TCM-190RB22CL)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	X-3359-415-1	BASE ASSY, MECHANICAL		209	3-359-429-01	SLIDER (BRAKE PLATE)	
202	3-359-469-01	SPACER		210	3-359-420-01	GEAR (CAM GEAR)	
* 203	3-359-425-01	SLIDER (REVERSE SLIDER)		211	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
204	3-359-426-01	LEVER (REVERSE LEVER)		212	X-3359-405-1	LEVER (FR ARM) ASSY	
* 205	3-359-415-01	SLIDER (TRIGGER SLIDER)		213	3-359-453-01	SPRING (FR ARM), TORSION	
206	3-359-448-01	GEAR (TRIGGER)		214	3-359-419-01	GEAR (FR GEAR)	
* 207	3-359-427-01	SLIDER (LEVERSE SLIDER)		215	3-359-421-01	CLUTCH (REEL DISK)	
208	3-359-454-01	SPRING, TORSION		216	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 5
ELECTRICAL PARTS LIST

MD-A MD-B

NOTE:

- The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.
- When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable
- Items marked "EE" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example :
uA...: μ A..., uPA...: μ PA...,
uPB...: μ PB..., uPC...: μ PC...,
uPD...: μ PD...
CAPACITORS
uF : μ F
COILS
uH : μ H
G : Germany Model
IT : Italian Model
EE : East European Model

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	A-2006-623-A	MD-A BOARD, COMPLETE *****				< RESISTOR >	
		< CAPACITOR >		R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
C11	1-163-131-00	CERAMIC CHIP 390PF 5% 50V		R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
C12	1-136-157-00	FILM 0.022uF 5% 50V		R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
C13	1-124-234-00	ELECT 22uF 20% 16V		R14	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		R21	1-216-099-00	METAL CHIP 120K 5% 1/10W	
C21	1-163-131-00	CERAMIC CHIP 390PF 5% 50V		R22	1-216-025-00	METAL CHIP 100 5% 1/10W	
C22	1-136-157-00	FILM 0.022uF 5% 50V		R23	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
C23	1-124-234-00	ELECT 22uF 20% 16V		R24	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
C28	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		R31	1-216-033-00	METAL CHIP 220 5% 1/10W	
C31	1-124-234-00	ELECT 22uF 20% 16V		R32	1-216-033-00	METAL CHIP 220 5% 1/10W	
C32	1-124-234-00	ELECT 22uF 20% 16V		R71	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
C72	1-124-499-11	ELECT, NONPOLAR 1uF 20% 50V		R72	1-216-081-00	METAL CHIP 22K 5% 1/10W	
		< JACK >		R73	1-216-089-00	METAL CHIP 47K 5% 1/10W	
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD		R74	1-216-089-00	METAL CHIP 47K 5% 1/10W	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P				< VARIABLE RESISTOR >	
		< CONNECTOR >		RV11	1-238-012-11	RES, ADJ, CARBON 1K	
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P		RV21	1-238-012-11	RES, ADJ, CARBON 1K	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P		RV71	1-238-016-11	RES, ADJ, CARBON 10K	
		< IC >		RV72	1-238-016-11	RES, ADJ, CARBON 10K	
IC31	8-759-106-02	IC uPC4570G2		*****			
		< JUMPER RESISTOR >		*	A-2006-624-A	MD-B BOARD, COMPLETE *****	
JW1	1-216-295-00	METAL CHIP 0 5% 1/10W				< CAPACITOR >	
JW51	1-216-296-00	METAL CHIP 0 5% 1/8W		C11	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
JW52	1-216-296-00	METAL CHIP 0 5% 1/8W		C12	1-136-157-00	FILM 0.022uF 5% 50V	
JW53	1-216-296-00	METAL CHIP 0 5% 1/8W		C13	1-124-234-00	ELECT 22uF 20% 16V	
JW54	1-216-296-00	METAL CHIP 0 5% 1/8W		C14	1-136-273-91	FILM 75PF 5% 630V	
		< TRANSISTOR >		C15	1-164-080-11	CERAMIC 390PF 10% 50V	
Q71	8-729-602-36	TRANSISTOR 2SA1602		C17	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
				C18	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
				C21	1-163-131-00	CERAMIC CHIP 390PF 5% 50V	
				C22	1-136-157-00	FILM 0.022uF 5% 50V	
				C23	1-124-234-00	ELECT 22uF 20% 16V	
				C24	1-136-273-91	FILM 75PF 5% 630V	

Ref.No.	Part No.	Description	Remarks	Ref.No.	Part No.	Description	Remarks
C25	1-164-080-11	CERAMIC	390PF 10% 50V			< COIL >	
C27	1-163-103-00	CERAMIC CHIP	27PF 5% 50V	L11	1-410-780-11	INDUCTOR	27mH
C28	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	L21	1-410-780-11	INDUCTOR	27mH
C31	1-124-234-00	ELECT	22uF 20% 16V			< TRANSISTOR >	
C32	1-124-234-00	ELECT	22uF 20% 16V				
C33	1-124-234-00	ELECT	22uF 20% 16V	Q51	8-729-808-01	TRANSISTOR	2SD1622-S
C51	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	Q52	8-729-808-01	TRANSISTOR	2SD1622-S
C52	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	Q53	8-729-808-01	TRANSISTOR	2SD1622-S
C53	1-163-022-00	CERAMIC CHIP	0.012uF 10% 50V	Q71	8-729-602-36	TRANSISTOR	2SA1602
C54	1-136-559-11	FILM	0.0047uF 5% 630V			< RESISTOR >	
C56	1-164-505-11	CERAMIC CHIP	2.2uF 16V	R11	1-216-099-00	METAL CHIP	120K 5% 1/10W
C57	1-164-346-11	CERAMIC CHIP	1uF 16V	R12	1-216-025-00	METAL CHIP	100 5% 1/10W
C58	1-163-024-00	CERAMIC CHIP	0.018uF 10% 50V	R13	1-216-100-00	METAL GLAZE	130K 5% 1/10W
C72	1-124-499-11	ELECT, NONPOLAR	1uF 20% 50V	R14	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
		< JACK >		R15	1-249-430-11	CARBON	12K 5% 1/4W
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD		R21	1-216-099-00	METAL CHIP	120K 5% 1/10W
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD					
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P		R22	1-216-025-00	METAL CHIP	100 5% 1/10W
		< CONNECTOR >		R23	1-216-100-00	METAL GLAZE	130K 5% 1/10W
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P		R24	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P		R25	1-249-430-11	CARBON	12K 5% 1/4W
		< DIODE >		R31	1-216-033-00	METAL CHIP	220 5% 1/10W
D31	8-719-404-46	DIODE	MA110-TW	R32	1-216-033-00	METAL CHIP	220 5% 1/10W
		< IC >		R41	1-249-393-11	CARBON	10 5% 1/4W
IC31	8-759-106-02	IC	uPC4570G2	R42	1-249-393-11	CARBON	10 5% 1/4W
		< JUMPER RESISTOR >		R51	1-216-075-00	METAL CHIP	12K 5% 1/10W
JW1	1-216-296-00	METAL CHIP	0 5% 1/8W	R52	1-216-075-00	METAL CHIP	12K 5% 1/10W
JW2	1-216-295-00	METAL CHIP	0 5% 1/10W	R53	1-216-073-00	METAL CHIP	10K 5% 1/10W
JW3	1-216-295-00	METAL CHIP	0 5% 1/10W	R54	1-216-309-00	METAL CHIP	5.6 5% 1/10W
JW4	1-216-295-00	METAL CHIP	0 5% 1/10W				
JW5	1-216-295-00	METAL CHIP	0 5% 1/10W	R55	1-216-309-00	METAL CHIP	5.6 5% 1/10W
JW6	1-216-295-00	METAL CHIP	0 5% 1/10W	R56	1-216-298-00	METAL CHIP	2.2 5% 1/10W
JW7	1-216-295-00	METAL CHIP	0 5% 1/10W	R71	1-216-082-00	METAL GLAZE	24K 5% 1/10W
JW52	1-216-296-00	METAL CHIP	0 5% 1/8W	R72	1-216-081-00	METAL CHIP	22K 5% 1/10W
JW53	1-216-296-00	METAL CHIP	0 5% 1/8W	R73	1-216-089-00	METAL CHIP	47K 5% 1/10W
JW54	1-216-296-00	METAL CHIP	0 5% 1/8W	R74	1-216-089-00	METAL CHIP	47K 5% 1/10W
JW55	1-216-296-00	METAL CHIP	0 5% 1/8W			< VARIABLE RESISTOR >	
JW56	1-216-296-00	METAL CHIP	0 5% 1/8W	RV11	1-238-012-11	RES, ADJ, CARBON	1K
JW57	1-216-296-00	METAL CHIP	0 5% 1/8W	RV12	1-238-551-11	RES, ADJ, CARBON	220K
JW58	1-216-296-00	METAL CHIP	0 5% 1/8W	RV21	1-238-012-11	RES, ADJ, CARBON	1K
JW59	1-216-296-00	METAL CHIP	0 5% 1/8W	RV22	1-238-551-11	RES, ADJ, CARBON	220K
JW60	1-216-296-00	METAL CHIP	0 5% 1/8W	RV71	1-238-016-11	RES, ADJ, CARBON	10K
JW61	1-216-296-00	METAL CHIP	0 5% 1/8W	RV72	1-238-016-11	RES, ADJ, CARBON	10K
		< RELAY >				< TRANSFORMER >	
				RY31	1-515-726-11	RELAY	
				T51	1-406-419-11	COIL, BIAS OSCILLATION	

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
*	A-4347-228-A	MAIN BOARD, COMPLETE (AEP, UK)		C362	1-161-494-00	CERAMIC	0.022uF 25V
*	A-4347-367-A	MAIN BOARD, COMPLETE (G, IT)		C363	1-164-159-11	CERAMIC	0.1uF 50V
*	A-4347-612-A	MAIN BOARD, COMPLETE (EE)		C364	1-161-494-00	CERAMIC	0.022uF 25V
*****				C501	1-102-961-00	CERAMIC	27PF 5% 50V
				C502	1-102-961-00	CERAMIC	27PF 5% 50V
< CAPACITOR >				C503	1-124-477-11	ELECT	47uF 20% 25V
C301	1-161-379-00	CERAMIC	0.01uF 20% 25V (G, IT)	C504	1-161-379-00	CERAMIC	0.01uF 20% 25V
C302	1-124-477-11	ELECT	47uF 20% 25V	C505	1-161-379-00	CERAMIC	0.01uF 20% 25V
C303	1-161-379-00	CERAMIC	0.01uF 20% 25V	C506	1-161-379-00	CERAMIC	0.01uF 20% 25V
C305	1-161-379-00	CERAMIC	0.01uF 20% 25V (G, IT)	C507	1-161-379-00	CERAMIC	0.01uF 20% 25V
C306	1-161-379-00	CERAMIC	0.01uF 20% 25V (G, IT)	C521	1-124-925-11	ELECT	2.2uF 20% 100V
C307	1-161-379-00	CERAMIC	0.01uF 20% 25V	C522	1-124-463-00	ELECT	0.1uF 20% 50V
C308	1-161-379-00	CERAMIC	0.01uF 20% 25V	C523	1-161-379-00	CERAMIC	0.01uF 20% 25V
C309	1-161-379-00	CERAMIC	0.01uF 20% 25V	C524	1-161-379-00	CERAMIC	0.01uF 20% 25V
C310	1-124-477-11	ELECT	47uF 20% 25V	C525	1-124-477-11	ELECT	47uF 20% 25V (AEP, UK, G, IT)
C311	1-161-379-00	CERAMIC	0.01uF 20% 25V	C525	1-126-101-11	ELECT	100uF 20% 16V (EE)
C312	1-101-006-00	CERAMIC	0.047uF 50V	C530	1-161-379-00	CERAMIC	0.01uF 20% 25V (G, IT)
C313	1-123-382-00	ELECT	3.3uF 20% 100V	C531	1-136-173-00	FILM	0.47uF 5% 50V
C314	1-161-379-00	CERAMIC	0.01uF 20% 25V	C532	1-161-494-00	CERAMIC	0.022uF 25V
C315	1-161-329-00	CERAMIC	0.0068uF 30% 16V	C533	1-124-463-00	ELECT	0.1uF 20% 50V
C316	1-162-282-31	CERAMIC	100PF 10% 50V	C1001	1-124-257-00	ELECT	2.2uF 20% 50V
C317	1-162-292-31	CERAMIC	680PF 10% 50V (G, IT)	C1002	1-162-282-31	CERAMIC	100PF 10% 50V
C318	1-124-903-11	ELECT	1uF 20% 50V	C1003	1-162-282-31	CERAMIC	100PF 10% 50V
C320	1-124-903-11	ELECT	1uF 20% 50V	C1004	1-124-477-11	ELECT	47uF 20% 25V
C321	1-124-902-00	ELECT	0.47uF 20% 50V	C1005	1-161-377-00	CERAMIC	0.0047uF 20% 16V
C322	1-124-463-00	ELECT	0.1uF 20% 50V	C1006	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C323	1-161-329-00	CERAMIC	0.0068uF 30% 16V	C1007	1-124-464-11	ELECT	0.22uF 20% 50V
C324	1-161-329-00	CERAMIC	0.0068uF 30% 16V	C1008	1-124-477-11	ELECT	47uF 20% 25V
C325	1-124-477-11	ELECT	47uF 20% 25V	C1009	1-124-477-11	ELECT	47uF 20% 25V
C326	1-124-907-11	ELECT	10uF 20% 50V	C1010	1-124-925-11	ELECT	2.2uF 20% 100V
C327	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1011	1-162-286-31	CERAMIC	220PF 10% 50V (G, IT)
C328	1-124-463-00	ELECT	0.1uF 20% 50V	C1012	1-124-925-11	ELECT	2.2uF 20% 100V
C329	1-124-927-11	ELECT	4.7uF 20% 100V	C1013	1-162-290-31	CERAMIC	470PF 10% 50V (G, IT)
C330	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1014	1-161-494-00	CERAMIC	0.022uF 25V
C331	1-126-176-11	ELECT	220uF 20% 10V	C1015	1-161-494-00	CERAMIC	0.022uF 25V
C332	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1016	1-162-286-31	CERAMIC	220PF 10% 50V (G, IT)
C335	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1051	1-124-257-00	ELECT	2.2uF 20% 50V
C336	1-161-379-00	CERAMIC	0.01uF 20% 25V	C1052	1-162-282-31	CERAMIC	100PF 10% 50V
C339	1-162-210-31	CERAMIC	30PF 5% 50V	C1053	1-162-282-31	CERAMIC	100PF 10% 50V
C341	1-123-382-00	ELECT	3.3uF 20% 100V	C1054	1-124-477-11	ELECT	47uF 20% 25V
C342	1-123-382-00	ELECT	3.3uF 20% 100V	C1055	1-161-377-00	CERAMIC	0.0047uF 20% 16V
C343	1-123-382-00	ELECT	3.3uF 20% 100V	C1056	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C344	1-123-382-00	ELECT	3.3uF 20% 100V	C1057	1-124-464-11	ELECT	0.22uF 20% 50V
C345	1-161-375-00	CERAMIC	0.0022uF 20% 50V	C1058	1-124-477-11	ELECT	47uF 20% 25V
C346	1-161-375-00	CERAMIC	0.0022uF 20% 50V	C1059	1-124-477-11	ELECT	47uF 20% 25V
C351	1-161-494-00	CERAMIC	0.022uF 25V	C1060	1-124-925-11	ELECT	2.2uF 20% 100V
C352	1-102-120-00	CERAMIC	0.0018uF 10% 50V	C1061	1-162-286-31	CERAMIC	220PF 10% 50V (G, IT)
C353	1-161-374-11	CERAMIC	0.0015uF 20% 50V	C1062	1-124-925-11	ELECT	2.2uF 20% 100V
C354	1-161-494-00	CERAMIC	0.022uF 25V	C1063	1-162-290-31	CERAMIC	470PF 10% 50V (G, IT)
C361	1-164-098-11	CERAMIC	0.047uF 12V	C1064	1-161-494-00	CERAMIC	0.022uF 25V

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C1065	1-161-494-00	CERAMIC	0.022uF 25V	C1181	1-136-159-00	FILM	0.033uF 5% 50V
C1066	1-162-286-31	CERAMIC	220PF 10% 50V (G, IT)	C1182	1-130-474-00	MYLAR	0.0018uF 5% 50V
C1101	1-124-925-11	ELECT	2.2uF 20% 100V	C1183	1-136-154-00	FILM	0.012uF 5% 50V
C1102	1-162-282-31	CERAMIC	100PF 10% 50V	C1184	1-162-292-31	CERAMIC	680PF 10% 50V
C1103	1-162-282-31	CERAMIC	100PF 10% 50V	C1185	1-161-377-00	CERAMIC	0.0047uF 20% 16V
C1104	1-124-907-11	ELECT	10uF 20% 50V	C1186	1-162-287-31	CERAMIC	270PF 10% 50V
C1105	1-124-252-00	ELECT	0.33uF 20% 50V	C1187	1-124-477-11	ELECT	47uF 20% 25V
C1106	1-136-160-00	FILM	0.039uF 5% 50V	C1188	1-124-477-11	ELECT	47uF 20% 25V
C1107	1-124-477-11	ELECT	47uF 20% 25V	C1189	1-161-494-00	CERAMIC	0.022uF 25V
C1108	1-161-494-00	CERAMIC	0.022uF 25V	C1201	1-124-925-11	ELECT	2.2uF 20% 100V
C1120	1-162-294-31	CERAMIC	0.001uF 10% 50V	C1202	1-162-286-31	CERAMIC	220PF 10% 50V (AEP, UK, EE)
C1121	1-162-286-31	CERAMIC	220PF 10% 50V	C1202	1-162-290-31	CERAMIC	470PF 10% 50V (G, IT)
C1122	1-124-907-11	ELECT	10uF 20% 50V	C1203	1-162-286-31	CERAMIC	220PF 10% 50V (AEP, UK, EE)
C1123	1-124-903-11	ELECT	1uF 20% 50V	C1203	1-162-290-31	CERAMIC	470PF 10% 50V (G, IT)
C1124	1-136-163-00	FILM	0.068uF 5% 50V	C1204	1-124-477-11	ELECT	47uF 20% 25V
C1125	1-124-902-00	ELECT	0.47uF 20% 50V	C1205	1-124-910-11	ELECT	47uF 20% 50V
C1126	1-136-158-00	FILM	0.027uF 5% 50V	C1206	1-124-122-11	ELECT	100uF 20% 50V
C1127	1-136-168-00	FILM	0.18uF 5% 50V	C1207	1-136-165-00	FILM	0.1uF 5% 50V
C1128	1-136-153-00	FILM	0.01uF 5% 50V	C1208	1-126-233-11	ELECT	22uF 20% 50V
C1129	1-136-163-00	FILM	0.068uF 5% 50V	C1209	1-136-165-00	FILM	0.1uF 5% 50V
C1130	1-130-478-00	MYLAR	0.0039uF 5% 50V	C1210	1-136-163-00	FILM	0.068uF 5% 50V
C1131	1-136-159-00	FILM	0.033uF 5% 50V	C1211	1-136-163-00	FILM	0.068uF 5% 50V
C1132	1-130-474-00	MYLAR	0.0018uF 5% 50V	C1212	1-126-233-11	ELECT	22uF 20% 50V
C1133	1-136-154-00	FILM	0.012uF 5% 50V	C1213	1-126-233-11	ELECT	22uF 20% 50V
C1134	1-162-292-31	CERAMIC	680PF 10% 50V	C1214	1-101-006-00	CERAMIC	0.047uF 50V (G, IT)
C1135	1-161-377-00	CERAMIC	0.0047uF 20% 16V	C1216	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)
C1136	1-162-287-31	CERAMIC	270PF 10% 50V	C1220	1-124-910-11	ELECT	47uF 20% 50V
C1137	1-124-477-11	ELECT	47uF 20% 25V	C1221	1-126-101-11	ELECT	100uF 20% 16V
C1138	1-124-477-11	ELECT	47uF 20% 25V	C1222	1-126-176-11	ELECT	220uF 20% 10V
C1139	1-161-494-00	CERAMIC	0.022uF 25V	C1223	1-126-176-11	ELECT	220uF 20% 10V
C1140	1-161-494-00	CERAMIC	0.022uF 25V	C1230	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)
C1151	1-124-925-11	ELECT	2.2uF 20% 100V	C1231	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)
C1152	1-162-282-31	CERAMIC	100PF 10% 50V	C1232	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)
C1153	1-162-282-31	CERAMIC	100PF 10% 50V	C1233	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)
C1154	1-124-907-11	ELECT	10uF 20% 50V	C1251	1-124-925-11	ELECT	2.2uF 20% 100V
C1155	1-124-252-00	ELECT	0.33uF 20% 50V	C1252	1-162-286-31	CERAMIC	220PF 10% 50V (AEP, UK, EE)
C1156	1-136-160-00	FILM	0.039uF 5% 50V	C1252	1-162-290-31	CERAMIC	470PF 10% 50V (G, IT)
C1157	1-124-477-11	ELECT	47uF 20% 25V	C1253	1-162-286-31	CERAMIC	220PF 10% 50V (AEP, UK, EE)
C1158	1-161-494-00	CERAMIC	0.022uF 25V	C1253	1-162-290-31	CERAMIC	470PF 10% 50V (G, IT)
C1170	1-162-294-31	CERAMIC	0.001uF 10% 50V	C1254	1-124-477-11	ELECT	47uF 20% 25V
C1171	1-162-286-31	CERAMIC	220PF 10% 50V	C1255	1-124-910-11	ELECT	47uF 20% 50V
C1172	1-124-907-11	ELECT	10uF 20% 50V	C1256	1-124-122-11	ELECT	100uF 20% 50V
C1173	1-124-903-11	ELECT	1uF 20% 50V	C1257	1-136-165-00	FILM	0.1uF 5% 50V
C1174	1-136-163-00	FILM	0.068uF 5% 50V	C1260	1-136-163-00	FILM	0.068uF 5% 50V
C1175	1-124-902-00	ELECT	0.47uF 20% 50V	C1261	1-136-163-00	FILM	0.068uF 5% 50V
C1176	1-136-158-00	FILM	0.027uF 5% 50V	C1262	1-126-233-11	ELECT	22uF 20% 50V
C1177	1-136-168-00	FILM	0.18uF 5% 50V	C1263	1-126-233-11	ELECT	22uF 20% 50V
C1178	1-136-153-00	FILM	0.01uF 5% 50V	C1264	1-101-006-00	CERAMIC	0.047uF 50V (G, IT)
C1179	1-136-163-00	FILM	0.068uF 5% 50V	C1266	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)
C1180	1-130-478-00	MYLAR	0.0039uF 5% 50V	C1280	1-161-494-00	CERAMIC	0.022uF 25V (G, IT)

When indicating parts by reference number, please include the board name.

MAIN

Ref.No.	Part No.	Description	Remarks
C1302	1-102-394-11	CERAMIC 0.01uF	250V
C1303	1-136-165-00	FILM 0.1uF	5% 50V
C1304	1-136-165-00	FILM 0.1uF	5% 50V
C1305	1-126-224-11	ELECT 4700uF	20% 42V
C1306	1-126-224-11	ELECT 4700uF	20% 42V
C1307	1-124-903-11	ELECT 1uF	20% 50V
C1308	1-102-394-11	CERAMIC 0.01uF	250V
C1309	1-124-122-11	ELECT 100uF	20% 50V
C1310	1-124-122-11	ELECT 100uF	20% 50V
C1311	1-126-105-11	ELECT 1000uF	20% 35V
C1312	1-126-101-11	ELECT 100uF	20% 16V
C1313	1-124-477-11	ELECT 47uF	20% 25V
C1314	1-124-122-11	ELECT 100uF 20% 50V (AEP, UK, G, EE)	
C1315	1-126-101-11	ELECT 100uF 20% 16V (AEP, UK, G, EE)	
C1317	1-124-636-00	ELECT 3300uF	20% 25V
C1318	1-124-636-00	ELECT 3300uF	20% 25V
C1319	1-124-907-11	ELECT 10uF	20% 50V
C1320	1-124-907-11	ELECT 10uF	20% 50V
C1325	1-126-103-11	ELECT 470uF	20% 16V
C1326	1-124-585-11	ELECT 3300uF	20% 10V
C1326	1-124-907-11	ELECT 10uF	20% 50V
C1328	1-124-585-11	ELECT 3300uF	20% 10V
C1346	1-124-477-11	ELECT 47uF	20% 25V

< FILTER >

CF301	1-577-070-81	FILTER, CERAMIC (AEP, UK, EE)
CF301	1-567-389-11	FILTER, CERAMIC (G, IT)
CF302	1-567-389-11	FILTER, CERAMIC (G, IT)
CF303	1-577-070-81	FILTER, CERAMIC (AEP, UK, EE)

CF303	1-567-389-11	FILTER, CERAMIC (G, IT)
CF304	1-577-075-11	OSCILLATOR, CERAMIC

< CONNECTOR >

* CN501	1-568-830-11	SOCKET, CONNECTOR 11P
* CN1001	1-580-691-11	JACK, PIN 2P (PHONO)
* CN1002	1-580-912-11	JACK, PIN 4P (CD/VIDEO)
* CN1003	1-564-508-11	PLUG, CONNECTOR 5P
* CN1004	1-568-836-11	SOCKET, CONNECTOR 17P
CN1201	1-569-130-11	JACK, PIN 2P (SURROUND)
* CN1203	1-564-506-11	PLUG, CONNECTOR 3P
* CN1204	1-564-510-11	PLUG, CONNECTOR 7P
* CN1302	1-566-210-11	PIN, CONNECTOR 3P (AEP, UK, G, EE)
* CN1303	1-564-509-11	PLUG, CONNECTOR 6P
* CN1304	1-568-934-11	PIN, CONNECTOR 7P
* CN1305	1-568-830-11	SOCKET, CONNECTOR 11P
CN1306	1-568-802-11	SOCKET, CONNECTOR 19P

< COMPOSITION CIRCUIT BLOCK >

CP1101	1-239-053-11	COMPOSITION CIRCUIT BLOCK
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Ref.No.	Part No.	Description	Remarks
CP1151	1-239-053-11	COMPOSITION CIRCUIT BLOCK	
< DIODE >			
D351	8-719-987-63	DIODE 1N4148M	
D1201	8-719-987-63	DIODE 1N4148M	
D1202	8-719-987-63	DIODE 1N4148M	
D1203	8-719-987-63	DIODE 1N4148M	
D1204	8-719-987-63	DIODE 1N4148M	
D1251	8-719-987-63	DIODE 1N4148M	
D1303	8-719-987-63	DIODE 1N4148M	
D1304	8-719-987-63	DIODE 1N4148M	
D1305	8-719-312-09	DIODE RBA-402	
D1306	8-719-200-82	DIODE 11ES2	
D1307	8-719-200-82	DIODE 11ES2	
D1308	8-719-200-82	DIODE 11ES2	
D1309	8-719-200-82	DIODE 11ES2	
D1310	8-719-200-82	DIODE 11ES2	
D1311	8-719-200-82	DIODE 11ES2	
D1312	8-719-200-82	DIODE 11ES2	
D1313	8-719-200-82	DIODE 11ES2	
D1314	8-719-001-76	DIODE UZL-12M3	
D1315	8-719-200-82	DIODE 11ES2	
D1316	8-719-200-82	DIODE 11ES2	
D1331	8-719-200-82	DIODE 11ES2	

< FRONTEND >

FE301	1-465-006-11	FRONT END (FM) (2 GANG) (AEP, UK)
FE301	1-463-857-21	FRONT END (FM) (G, IT)
FE301	1-465-396-11	FRONT END (FM 3GANG) (EE)
FE351	1-236-463-11	ENCAPSULATED COMPONENT
FE352	1-236-462-11	ENCAPSULATED COMPONENT

< IC >

IC301	8-759-821-45	IC LA1851N
IC501	8-759-820-91	IC LC7218
IC1001	8-759-634-51	IC M5218AP
IC1002	8-759-000-48	IC uPD4052BC-A
IC1003	8-759-000-49	IC uPD4066BC
IC1004	8-759-634-51	IC M5218AP
IC1005	8-759-000-49	IC uPD4066BC
IC1101	8-759-634-51	IC M5218AP
IC1102	8-759-000-48	IC uPD4052BC-A
IC1103	8-759-000-48	IC uPD4052BC-A
IC1104	8-759-804-49	IC LC7522
IC1105	8-759-633-78	IC M5289P
IC1155	8-759-633-78	IC M5289P
IC1201	8-749-920-09	IC STK-4152MK2K
IC1202	8-759-111-68	IC uPC1237HA
IC1301	8-759-231-58	IC M5F7812L (AEP, UK, G, EE)

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
IC1302	8-759-604-86	IC M5F7807		Q1202	8-729-900-80	TRANSISTOR DTC114ES	
IC1303	8-759-604-90	IC M5F7907L		Q1203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
IC1304	8-759-231-53	IC M5F7805L		Q1204	8-729-900-63	TRANSISTOR DTA124ES	
< IFT >				Q1251	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
IFT301	1-404-713-11	TRANSFORMER, IF		Q1301	8-729-209-15	TRANSISTOR 2SD2012	
< COIL >				< RESISTOR >			
L301	1-407-500-00	INDUCTOR 4.7mH		R301	1-249-401-11	CARBON 47 5% 1/4W	
L351	1-410-525-11	INDUCTOR 220uH		R302	1-249-413-11	CARBON 470 5% 1/4W (AEP, UK, EE)	
L1201	1-420-872-00	COIL, AIR CORE		R302	1-249-405-11	CARBON 100 5% 1/4W (G, IT)	
L1251	1-420-872-00	COIL, AIR CORE		R303	1-249-411-11	CARBON 330 5% 1/4W (G, IT)	
L1301	1-408-117-00	INDUCTOR 10uH (G)		R304	1-249-432-11	CARBON 18K 5% 1/4W (G, IT)	
L1302	1-408-117-00	INDUCTOR 10uH (G)		R305	1-249-411-11	CARBON 330 5% 1/4W (G, IT)	
< FILTER >				R306	1-249-434-11	CARBON 27K 5% 1/4W (G, IT)	
LPF301	1-235-164-00	FILTER, LOW PASS		R307	1-249-414-11	CARBON 560 5% 1/4W (G, IT)	
LPF302	1-235-164-00	FILTER, LOW PASS		R308	1-249-411-11	CARBON 330 5% 1/4W	
< TRANSISTOR >				R309	1-249-432-11	CARBON 18K 5% 1/4W	
Q301	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4 (G, IT)		R310	1-249-411-11	CARBON 330 5% 1/4W	
Q302	8-729-230-XX	TRANSISTOR 2SC26690Y-TPE4 (G, IT)		R311	1-249-434-11	CARBON 27K 5% 1/4W	
Q303	8-729-230-XX	TRANSISTOR 2SC26690Y		R312	1-249-414-11	CARBON 560 5% 1/4W	
Q304	8-729-230-XX	TRANSISTOR 2SC26690Y		R313	1-249-405-11	CARBON 100 5% 1/4W	
Q305	8-729-900-80	TRANSISTOR DTC114ES		R314	1-249-437-11	CARBON 47K 5% 1/4W (G, IT)	
Q306	8-729-900-61	TRANSISTOR DTA114ES		R315	1-249-435-11	CARBON 33K 5% 1/4W (G, IT)	
Q307	8-729-900-80	TRANSISTOR DTC114ES		R316	1-249-429-11	CARBON 10K 5% 1/4W	
Q308	8-729-119-78	TRANSISTOR 2SC2785-HFE		R317	1-249-417-11	CARBON 1K 5% 1/4W	
Q309	8-729-119-78	TRANSISTOR 2SC2785-HFE		R318	1-249-435-11	CARBON 33K 5% 1/4W	
Q351	8-729-900-80	TRANSISTOR DTC114ES		R319	1-249-428-11	CARBON 8.2K 5% 1/4W	
Q352	8-729-119-78	TRANSISTOR 2SC2785-HFE		R320	1-249-432-11	CARBON 18K 5% 1/4W	
Q353	8-729-119-76	TRANSISTOR 2SA1175-HFE		R321	1-249-423-11	CARBON 3.3K 5% 1/4W	
Q354	8-729-900-80	TRANSISTOR DTC114ES		R322	1-249-429-11	CARBON 10K 5% 1/4W	
Q355	8-729-900-80	TRANSISTOR DTC114ES		R323	1-249-418-11	CARBON 1.2K 5% 1/4W (AEP, UK, EE)	
Q356	8-729-900-80	TRANSISTOR DTC114ES		R323	1-249-417-11	CARBON 1K 5% 1/4W (G, IT)	
Q501	8-729-900-80	TRANSISTOR DTC114ES		R324	1-249-429-11	CARBON 10K 5% 1/4W	
Q502	8-729-900-61	TRANSISTOR DTA114ES		R325	1-249-429-11	CARBON 10K 5% 1/4W	
Q521	8-729-202-67	TRANSISTOR 2SK246-GR3		R326	1-249-409-11	CARBON 220 5% 1/4W	
Q522	8-729-201-84	TRANSISTOR 2SC3112-B		R327	1-249-437-11	CARBON 47K 5% 1/4W	
Q531	8-729-202-67	TRANSISTOR 2SK246-GR3		R328	1-249-437-11	CARBON 47K 5% 1/4W	
Q532	8-729-201-84	TRANSISTOR 2SC3112-B		R331	1-247-891-00	CARBON 330K 5% 1/4W	
Q1001	8-729-119-76	TRANSISTOR 2SA1175-HFE		R332	1-247-891-00	CARBON 330K 5% 1/4W	
Q1002	8-729-119-78	TRANSISTOR 2SC2785-HFE		R333	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q1004	8-729-900-36	TRANSISTOR DTC124ES		R334	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q1005	8-729-119-76	TRANSISTOR 2SA1175-HFE		R335	1-249-420-11	CARBON 1.8K 5% 1/4W	
Q1006	8-729-900-36	TRANSISTOR DTC124ES		R336	1-249-420-11	CARBON 1.8K 5% 1/4W	
Q1101	8-729-119-78	TRANSISTOR 2SC2785-HFE		R337	1-249-426-11	CARBON 5.6K 5% 1/4W	
Q1151	8-729-119-78	TRANSISTOR 2SC2785-HFE		R338	1-249-426-11	CARBON 5.6K 5% 1/4W	
Q1201	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA		R351	1-249-433-11	CARBON 22K 5% 1/4W	
				R352	1-249-437-11	CARBON 47K 5% 1/4W	
				R353	1-247-903-00	CARBON 1M 5% 1/4W	
				R354	1-249-441-11	CARBON 100K 5% 1/4W	
				R355	1-249-433-11	CARBON 22K 5% 1/4W	

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks			Ref. No.	Part No.	Description	Remarks		
R356	1-249-421-11	CARBON	2. 2K	5%	1/4W	R1012	1-249-417-11	CARBON	1K	5%	1/4W
R361	1-249-437-11	CARBON	47K	5%	1/4W	R1013	1-249-441-11	CARBON	100K	5%	1/4W
R362	1-249-437-11	CARBON	47K	5%	1/4W	R1014	1-249-437-11	CARBON	47K	5%	1/4W
R363	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1016	1-249-437-11	CARBON	47K	5%	1/4W
R364	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1017	1-249-434-11	CARBON	27K	5%	1/4W
R365	1-249-429-11	CARBON	10K	5%	1/4W	R1018	1-249-429-11	CARBON	10K	5%	1/4W
R366	1-249-413-11	CARBON	470	5%	1/4W	R1020	1-249-433-11	CARBON	22K	5%	1/4W
R367	1-249-434-11	CARBON	27K	5%	1/4W	R1021	1-249-433-11	CARBON	22K	5%	1/4W
R368	1-249-433-11	CARBON	22K	5%	1/4W	R1022	1-249-433-11	CARBON	22K	5%	1/4W
R501	1-249-417-11	CARBON	1K	5%	1/4W	R1023	1-249-433-11	CARBON	22K	5%	1/4W
R502	1-249-417-11	CARBON	1K	5%	1/4W	R1024	1-249-433-11	CARBON	22K	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W	R1025	1-249-433-11	CARBON	22K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W	R1026	1-249-433-11	CARBON	22K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W	R1029	1-249-433-11	CARBON	22K	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W	R1030	1-249-433-11	CARBON	22K	5%	1/4W
R510	1-249-401-11	CARBON	47	5%	1/4W	R1031	1-249-433-11	CARBON	22K	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W	R1032	1-249-433-11	CARBON	22K	5%	1/4W
R512	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1051	1-249-417-11	CARBON	1K	5%	1/4W (G, IT)
R513	1-249-417-11	CARBON	1K	5%	1/4W	R1052	1-249-417-11	CARBON	1K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W	R1053	1-249-441-11	CARBON	100K	5%	1/4W
R515	1-249-417-11	CARBON	1K	5%	1/4W	R1054	1-249-416-11	CARBON	820	5%	1/4W
R521	1-249-423-11	CARBON	3. 3K	5%	1/4W	R1055	1-247-897-11	CARBON	560K	5%	1/4W
R522	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1056	1-249-437-11	CARBON	47K	5%	1/4W
R523	1-249-414-11	CARBON	560	5%	1/4W	R1057	1-249-409-11	CARBON	220	5%	1/4W
R524	1-249-417-11	CARBON	1K	5%	1/4W	R1058	1-249-441-11	CARBON	100K	5%	1/4W
R525	1-249-410-11	CARBON	270	5%	1/4W	R1059	1-249-409-11	CARBON	220	5%	1/4W
R526	1-249-421-11	CARBON	2. 2K	5%	1/4W	R1060	1-249-421-11	CARBON	2. 2K	5%	1/4W
R527	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1061	1-249-428-11	CARBON	8. 2K	5%	1/4W
R528	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1062	1-249-417-11	CARBON	1K	5%	1/4W
R529	1-249-405-11	CARBON	100	5%	1/4W	R1063	1-249-441-11	CARBON	100K	5%	1/4W
R530	1-249-405-11	CARBON	100	5%	1/4W	R1064	1-249-437-11	CARBON	47K	5%	1/4W
R531	1-249-423-11	CARBON	3. 3K	5%	1/4W	R1066	1-249-437-11	CARBON	47K	5%	1/4W
R532	1-249-433-11	CARBON	22K	5%	1/4W	R1067	1-249-434-11	CARBON	27K	5%	1/4W
R533	1-249-414-11	CARBON	560	5%	1/4W	R1068	1-249-429-11	CARBON	10K	5%	1/4W
R534	1-249-417-11	CARBON	1K	5%	1/4W	R1101	1-249-441-11	CARBON	100K	5%	1/4W
R535	1-249-410-11	CARBON	270	5%	1/4W	R1102	1-249-417-11	CARBON	1K	5%	1/4W
R536	1-249-421-11	CARBON	2. 2K	5%	1/4W	R1103	1-249-441-11	CARBON	100K	5%	1/4W
R537	1-249-425-11	CARBON	4. 7K	5%	1/4W	R1104	1-249-429-11	CARBON	10K	5%	1/4W
R538	1-249-405-11	CARBON	100	5%	1/4W	R1105	1-249-427-11	CARBON	6. 8K	5%	1/4W
R1001	1-249-417-11	CARBON	1K	5%	1/4W (G, IT)	R1106	1-249-412-11	CARBON	390	5%	1/4W
R1002	1-249-417-11	CARBON	1K	5%	1/4W	R1107	1-249-423-11	CARBON	3. 3K	5%	1/4W
R1003	1-249-441-11	CARBON	100K	5%	1/4W	R1108	1-249-441-11	CARBON	100K	5%	1/4W
R1004	1-249-416-11	CARBON	820	5%	1/4W	R1109	1-249-427-11	CARBON	6. 8K	5%	1/4W
R1005	1-247-897-11	CARBON	560K	5%	1/4W	R1110	1-249-441-11	CARBON	100K	5%	1/4W
R1006	1-249-437-11	CARBON	47K	5%	1/4W	R1111	1-249-431-11	CARBON	15K	5%	1/4W
R1007	1-249-409-11	CARBON	220	5%	1/4W	R1112	1-249-423-11	CARBON	3. 3K	5%	1/4W
R1008	1-249-441-11	CARBON	100K	5%	1/4W	R1113	1-249-429-11	CARBON	10K	5%	1/4W
R1009	1-249-409-11	CARBON	220	5%	1/4W	R1114	1-249-435-11	CARBON	33K	5%	1/4W
R1010	1-249-421-11	CARBON	2. 2K	5%	1/4W	R1115	1-249-432-11	CARBON	18K	5%	1/4W
R1011	1-249-428-11	CARBON	8. 2K	5%	1/4W	R1116	1-249-433-11	CARBON	22K	5%	1/4W

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R1117	1-249-433-11	CARBON	22K 5% 1/4W	R1230	1-249-439-11	CARBON	68K 5% 1/4W
R1118	1-249-433-11	CARBON	22K 5% 1/4W	R1231	1-249-417-11	CARBON	1K 5% 1/4W
R1119	1-249-433-11	CARBON	22K 5% 1/4W	R1232	1-249-428-11	CARBON	8. 2K 5% 1/4W
R1120	1-249-427-11	CARBON	6. 8K 5% 1/4W	R1233	1-249-433-11	CARBON	22K 5% 1/4W
R1127	1-249-417-11	CARBON	1K 5% 1/4W	R1234	1-249-433-11	CARBON	22K 5% 1/4W
R1128	1-249-417-11	CARBON	1K 5% 1/4W	R1235	1-249-435-11	CARBON	33K 5% 1/4W
R1130	1-249-441-11	CARBON	100K 5% 1/4W	R1236	1-249-441-11	CARBON	100K 5% 1/4W
R1151	1-249-441-11	CARBON	100K 5% 1/4W	R1237	1-249-429-11	CARBON	10K 5% 1/4W
R1152	1-249-417-11	CARBON	1K 5% 1/4W	R1238	1-249-433-11	CARBON	22K 5% 1/4W
R1153	1-249-441-11	CARBON	100K 5% 1/4W	R1239	1-249-426-11	CARBON	5. 6K 5% 1/4W
R1154	1-249-429-11	CARBON	10K 5% 1/4W	R1240	1-249-438-11	CARBON	56K 5% 1/4W
R1155	1-249-427-11	CARBON	6. 8K 5% 1/4W	R1251	1-249-417-11	CARBON	1K 5% 1/4W
R1156	1-249-412-11	CARBON	390 5% 1/4W	R1252	1-249-438-11	CARBON	56K 5% 1/4W
R1157	1-249-423-11	CARBON	3. 3K 5% 1/4W	R1253	1-249-414-11	CARBON	560 5% 1/4W
R1158	1-249-441-11	CARBON	100K 5% 1/4W	R1254	1-249-438-11	CARBON	56K 5% 1/4W
R1159	1-249-427-11	CARBON	6. 8K 5% 1/4W	R1255	1-249-425-11	CARBON	4. 7K 5% 1/4W
R1160	1-249-441-11	CARBON	100K 5% 1/4W	R1256	1-249-425-11	CARBON	4. 7K 5% 1/4W
R1161	1-249-431-11	CARBON	15K 5% 1/4W	R1257	1-249-425-11	CARBON	4. 7K 5% 1/4W
R1162	1-249-423-11	CARBON	3. 3K 5% 1/4W	R1258	1-249-425-11	CARBON	4. 7K 5% 1/4W
R1170	1-249-427-11	CARBON	6. 8K 5% 1/4W	△R1259	1-212-881-11	FUSIBLE	100 5% 1/4W F
R1180	1-249-441-11	CARBON	100K 5% 1/4W	△R1260	1-217-151-00	RES, METAL PLATE	0. 22 2W
R1201	1-249-417-11	CARBON	1K 5% 1/4W	R1261	1-249-417-11	CARBON	1K 5% 1/4W
R1202	1-249-438-11	CARBON	56K 5% 1/4W	R1262	1-249-431-11	CARBON	15K 5% 1/4W
R1203	1-249-414-11	CARBON	560 5% 1/4W	R1263	1-249-441-11	CARBON	100K 5% 1/4W
R1204	1-249-438-11	CARBON	56K 5% 1/4W	R1268	1-249-397-11	CARBON	22 5% 1/4W
R1205	1-249-425-11	CARBON	4. 7K 5% 1/4W	R1269	1-249-397-11	CARBON	22 5% 1/4W
R1206	1-249-425-11	CARBON	4. 7K 5% 1/4W	R1270	1-249-397-11	CARBON	22 5% 1/4W
R1207	1-249-425-11	CARBON	4. 7K 5% 1/4W	R1271	1-249-397-11	CARBON	22 5% 1/4W
R1208	1-249-425-11	CARBON	4. 7K 5% 1/4W	R1272	1-249-416-11	CARBON	820 5% 1/4W
△R1209	1-212-881-11	FUSIBLE	100 5% 1/4W F	R1273	1-249-416-11	CARBON	820 5% 1/4W
△R1210	1-217-151-00	RES, METAL PLATE	0. 22 2W	R1274	1-249-385-11	CARBON	2. 2 5% 1/6W (G, IT)
R1211	1-249-417-11	CARBON	1K 5% 1/4W	R1275	1-249-385-11	CARBON	2. 2 5% 1/6W (G, IT)
R1212	1-249-431-11	CARBON	15K 5% 1/4W	R1290	1-249-437-11	CARBON	47K 5% 1/4W
R1213	1-249-441-11	CARBON	100K 5% 1/4W	R1301	1-249-429-11	CARBON	10K 5% 1/4W
R1214	1-249-421-11	CARBON	2. 2K 5% 1/4W	R1302	1-249-429-11	CARBON	10K 5% 1/4W
R1215	1-249-421-11	CARBON	2. 2K 5% 1/4W	R1303	1-249-421-11	CARBON	2. 2K 5% 1/4W
R1216	1-249-421-11	CARBON	2. 2K 5% 1/4W	R315B	1-249-404-00	CARBON	82 5% 1/4W
R1217	1-249-421-11	CARBON	2. 2K 5% 1/4W	< VARIABLE RESISTOR >			
R1218	1-249-397-11	CARBON	22 5% 1/4W	RV301	1-238-601-11	RES, ADJ, CARBON, 22K (AM TUNED)	
R1219	1-249-397-11	CARBON	22 5% 1/4W	RV302	1-238-601-11	RES, ADJ, CARBON, 22K (FM TUNED)	
R1220	1-249-397-11	CARBON	22 5% 1/4W	< RELAY >			
R1221	1-249-397-11	CARBON	22 5% 1/4W	RY1201	1-515-533-11	RELAY	
R1222	1-249-416-11	CARBON	820 5% 1/4W	< TRANSFORMER >			
R1223	1-249-416-11	CARBON	820 5% 1/4W	T301	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
R1224	1-249-385-11	CARBON	2. 2 5% 1/6W (G, IT)	T302	1-235-126-00	ENCAPSULATED COMPONENT (G, IT)	
R1225	1-249-385-11	CARBON	2. 2 5% 1/6W (G, IT)				
△R1226	1-215-915-11	METAL OXIDE	470 5% 3W F				
R1227	1-249-429-11	CARBON	10K 5% 1/4W				
R1228	1-247-881-00	CARBON	120K 5% 1/4W				
R1229	1-249-439-11	CARBON	68K 5% 1/4W				

The components identified by mark △ or dotted line with mark △ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

MAIN

LAEF SW(A)

LAEF SW(B)

PANEL

Ref.No.	Part No.	Description	Remarks	Ref.No.	Part No.	Description	Remarks
< TERMINAL >				< SWITCH >			
* TM301	1-537-288-11	TERMINAL BOARD, ANTENNA (PAL)		S81	1-571-958-11	SWITCH, PUSH (1 KEY)	
TM301	1-537-288-31	TERMINAL BOARD, ANTENNA (PAL)		S82	1-571-281-21	SWITCH, LEAF	
TM1201	1-537-326-11	TERMINAL BOARD (AEP, UK, EE)		S84	1-571-281-21	SWITCH, LEAF	
* TM1201	1-537-327-11	TERMINAL BOARD (G, IT)		S85	1-571-281-21	SWITCH, LEAF	
< TEST PIN >				S86	1-571-281-21	SWITCH, LEAF	
< VIBRATOR >				*****			
XT501	1-577-126-11	VIBRATOR, CRYSTAL (7.2MHz)		* A-4347-232-A	PANEL BOARD, COMPLETE (AEP, UK, G)		
*****				* A-4347-371-A	PANEL BOARD, COMPLETE (IT)		
< CAPACITOR >				* A-4347-614-A	PANEL BOARD, COMPLETE (EE)		
< CONNECTOR >				*****			
* 1-638-020-11	LAEF SW(A) BOARD (DECK A)			C601	1-125-486-11	DOUBLE LAYERS	0.22F 5.5V
*****				C602	1-136-153-00	FILM	0.01uF 5% 50V
< IC >				C603	1-161-379-00	CERAMIC	0.01uF 20% 25V
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P		C604	1-124-907-11	ELECT	10uF 20% 50V
< RESISTOR >				C605	1-126-233-11	ELECT	22uF 20% 50V
IC81	8-719-710-03	DIODE NJL5165K-B		C606	1-102-951-00	CERAMIC	15PF 5% 50V
< SWITCH >				C607	1-102-949-00	CERAMIC	12PF 5% 50V
R84	1-249-417-11	CARBON 1K 5% 1/4W		C608	1-124-927-11	ELECT	4.7uF 20% 100V
R85	1-249-408-11	CARBON 180 5% 1/4W		C609	1-136-153-00	FILM	0.01uF 5% 50V
< CAPACITOR >				C610	1-161-379-00	CERAMIC	0.01uF 20% 25V
< CONNECTOR >				C650	1-124-907-11	ELECT 10uF	20% 50V (AEP, UK, G, IT)
< IC >				C1401	1-136-165-00	FILM	0.1uF 5% 50V
< RESISTOR >				C1402	1-162-306-11	CERAMIC	0.01uF 20% 16V
< SWITCH >				C1403	1-126-101-11	ELECT	100uF 20% 16V
S81	1-571-958-11	SWITCH, PUSH (1 KEY)		C1404	1-161-494-00	CERAMIC	0.022uF 25V
S82	1-571-281-21	SWITCH, LEAF		C1405	1-125-486-11	DOUBLE LAYERS	0.22F 5.5V
S86	1-571-281-21	SWITCH, LEAF		C1406	1-126-096-11	ELECT	10uF 20% 35V
*****				C1407	1-126-096-11	ELECT	10uF 20% 35V
* 1-638-020-11	LAEF SW(B) BOARD (DECK B)			C1408	1-161-374-11	CERAMIC	0.0015uF 20% 50V
*****				C1409	1-161-494-00	CERAMIC	0.022uF 25V
< CONNECTOR >				C1410	1-126-101-11	ELECT	100uF 20% 16V
* CNP81	1-568-850-11	SOCKET, CONNECTOR 7P		C1411	1-161-494-00	CERAMIC	0.022uF 25V
< IC >				C1412	1-124-907-11	ELECT	10uF 20% 50V
< RESISTOR >				C1413	1-161-494-00	CERAMIC	0.022uF 25V
IC81	8-719-710-03	DIODE NJL5165K-B		C1414	1-124-907-11	ELECT	10uF 20% 50V
< SWITCH >				C1415	1-162-294-31	CERAMIC	0.001uF 10% 50V
R81	1-249-414-11	CARBON 560 5% 1/4W		< FILTER >			
R82	1-247-818-11	CARBON 300 5% 1/4W		CF1401	1-567-775-11	VIBRATOR, CERAMIC	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W		< CONNECTOR >			
R84	1-249-417-11	CARBON 1K 5% 1/4W		* CN601	1-568-830-11	SOCKET, CONNECTOR 11P	
R85	1-249-408-11	CARBON 180 5% 1/4W		* CN1401	1-568-836-11	SOCKET, CONNECTOR 17P	
< CAPACITOR >				CN1402	1-568-802-11	SOCKET, CONNECTOR 19P	

When indicating parts by reference number, please include the board name.

PANEL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< COMPOSITION CIRCUIT BLOCK >							
CP1401	1-239-054-11	COMPOSITION CIRCUIT BLOCK		D1426	8-719-301-38 LED	SEL2210S-C (MEMORY)	
CP1402	1-239-054-11	COMPOSITION CIRCUIT BLOCK		D1427	8-719-301-38 LED	SEL2210S-C (PERSONAL)	
< DIODE >				D1428	8-719-301-38 LED	SEL2210S-C (HIGH)	
D601	8-719-987-63	DIODE 1N4148M		D1429	8-719-301-38 LED	SEL2210S-C (MID)	
D602	8-719-987-63	DIODE 1N4148M		D1430	8-719-301-38 LED	SEL2210S-C (LOW)	
D603	8-719-987-63	DIODE 1N4148M		D1431	8-719-301-38 LED	SEL2210S-C (OFF)	
D604	8-719-987-63	DIODE 1N4148M		D1432	8-719-301-38 LED	SEL2210S-C (HIGH)	
D605	8-719-987-63	DIODE 1N4148M (IT)		D1433	8-719-301-38 LED	SEL2210S-C (MID)	
D609	8-719-987-63	DIODE 1N4148M		D1434	8-719-301-38 LED	SEL2210S-C (LOW)	
D610	8-719-987-63	DIODE 1N4148M		D1435	8-719-301-38 LED	SEL2210S-C (OFF)	
D612	8-719-987-63	DIODE 1N4148M		D1436	8-719-301-38 LED	SEL2210S-C (EFFECT)	
D613	8-719-987-63	DIODE 1N4148M		D1437	8-719-302-45 LED	SEL1210S (VIDEO)	
D614	8-719-987-63	DIODE 1N4148M		D1438	8-719-302-45 LED	SEL1210S (TAPE)	
D615	8-719-987-63	DIODE 1N4148M		D1439	8-719-302-45 LED	SEL1210S (CD)	
D616	8-719-987-63	DIODE 1N4148M		D1440	8-719-302-45 LED	SEL1210S (TUNER)	
D617	8-719-987-63	DIODE 1N4148M		D1441	8-719-302-45 LED	SEL1210S (PHONO)	
D618	8-719-987-63	DIODE 1N4148M		D1442	8-719-301-38 LED	SEL2210S-C (VOL)	
D619	8-719-987-63	DIODE 1N4148M		D1443	8-719-301-38 LED	SEL2210S-C (EQ, REC)	
D620	8-719-987-63	DIODE 1N4148M		< FILTER >			
D621	8-719-987-63	DIODE 1N4148M		FL601	1-519-732-11	INDICATOR TUBE, FLUORESCENT	
D622	8-719-987-63	DIODE 1N4148M (EE)		FL1401	1-519-648-21	INDICATOR TUBE, FLUORESCENT	
D624	8-719-987-63	DIODE 1N4148M (EE)		< IC >			
D1401	8-719-987-63	DIODE 1N4148M		IC601	8-759-053-98 IC	TMP47C1270N-SOX1029	
D1402	8-719-987-63	DIODE 1N4148M		IC602	8-749-920-83 IC	GPIU52XB	
D1403	8-719-987-63	DIODE 1N4148M		IC1106	8-759-820-62 IC	LB1639	
D1404	8-719-987-63	DIODE 1N4148M		IC1401	8-759-153-68 IC	uPD75106GF-761-3BE	
D1405	8-719-987-63	DIODE 1N4148M		IC1402	8-759-820-59 IC	LC7565	
D1406	8-719-987-63	DIODE 1N4148M		IC1403	8-759-991-11 IC	XR1091DCP	
D1407	8-719-987-63	DIODE 1N4148M		IC1404	8-759-635-63 IC	M51943BSL	
D1408	8-719-987-63	DIODE 1N4148M		< COIL >			
D1409	8-719-987-63	DIODE 1N4148M		L601	1-410-521-11	INDUCTOR 100uH	
D1410	8-719-987-63	DIODE 1N4148M		< TRANSISTOR >			
D1411	8-719-987-63	DIODE 1N4148M		Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1412	8-719-933-36	DIODE HZS6B1L		Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1413	8-719-933-36	DIODE HZS6B1L		Q1102	8-729-141-26	TRANSISTOR 2SC3622A-LK	
D1414	8-719-987-63	DIODE 1N4148M		Q1152	8-729-141-26	TRANSISTOR 2SC3622A-LK	
D1415	8-719-987-63	DIODE 1N4148M		Q1401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1416	8-719-987-63	DIODE 1N4148M		Q1402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1417	8-719-987-63	DIODE 1N4148M		Q1403	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1418	8-719-987-63	DIODE 1N4148M		Q1404	8-729-900-61	TRANSISTOR DTA114ES	
D1419	8-719-987-63	DIODE 1N4148M		Q1405	8-729-900-80	TRANSISTOR DTC114ES	
D1420	8-719-987-63	DIODE 1N4148M		Q1406	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1421	8-719-302-45	LED SEL1210S	1	Q1407	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D1422	8-719-302-45	LED SEL1210S	2	Q1408	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1423	8-719-302-45	LED SEL1210S	3	Q1409	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D1424	8-719-302-45	LED SEL1210S	4				
D1425	8-719-302-45	LED SEL1210S	5				

When indicating parts by reference number, please include the board name.

PANEL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q1410	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1402	1-249-435-11	CARBON 33K 5% 1/4W	
Q1411	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1403	1-249-429-11	CARBON 10K 5% 1/4W	
Q1412	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1404	1-249-437-11	CARBON 47K 5% 1/4W	
Q1413	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1405	1-249-405-11	CARBON 100 5% 1/4W	
Q1414	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1406	1-249-425-11	CARBON 4.7K 5% 1/4W	
< RESISTOR >				R1407	1-249-437-11	CARBON 47K 5% 1/4W	
R601	1-249-405-11	CARBON 100 5% 1/4W		R1408	1-249-437-11	CARBON 47K 5% 1/4W	
R602	1-249-417-11	CARBON 1K 5% 1/4W		R1409	1-249-437-11	CARBON 47K 5% 1/4W	
R603	1-249-429-11	CARBON 10K 5% 1/4W		R1410	1-249-437-11	CARBON 47K 5% 1/4W	
R604	1-249-425-11	CARBON 4.7K 5% 1/4W		R1412	1-249-441-11	CARBON 100K 5% 1/4W	
R605	1-249-441-11	CARBON 100K 5% 1/4W		R1413	1-249-417-11	CARBON 1K 5% 1/4W	
R606	1-249-405-11	CARBON 100 5% 1/4W		R1414	1-249-417-11	CARBON 1K 5% 1/4W	
R607	1-249-409-11	CARBON 220 5% 1/4W		R1422	1-249-417-11	CARBON 1K 5% 1/4W	
R608	1-249-409-11	CARBON 220 5% 1/4W		R1423	1-249-437-11	CARBON 47K 5% 1/4W	
R609	1-249-409-11	CARBON 220 5% 1/4W		R1424	1-249-425-11	CARBON 4.7K 5% 1/4W	
R610	1-249-409-11	CARBON 220 5% 1/4W		R1425	1-249-437-11	CARBON 47K 5% 1/4W	
R611	1-249-421-11	CARBON 2.2K 5% 1/4W		R1426	1-249-437-11	CARBON 47K 5% 1/4W	
R612	1-249-423-11	CARBON 3.3K 5% 1/4W		R1427	1-249-437-11	CARBON 47K 5% 1/4W	
R613	1-249-441-11	CARBON 100K 5% 1/4W		R1428	1-249-437-11	CARBON 47K 5% 1/4W	
R614	1-249-441-11	CARBON 100K 5% 1/4W		R1429	1-247-891-00	CARBON 330K 5% 1/4W	
R615	1-249-441-11	CARBON 100K 5% 1/4W		R1430	1-247-891-00	CARBON 330K 5% 1/4W	
R616	1-249-429-11	CARBON 10K 5% 1/4W		R1431	1-249-432-11	CARBON 18K 5% 1/4W	
R617	1-249-433-11	CARBON 22K 5% 1/4W		R1432	1-249-427-11	CARBON 6.8K 5% 1/4W	
R618	1-249-425-11	CARBON 4.7K 5% 1/4W		R1433	1-249-427-11	CARBON 6.8K 5% 1/4W	
R619	1-249-429-11	CARBON 10K 5% 1/4W		R1434	1-249-435-11	CARBON 33K 5% 1/4W	
R620	1-249-429-11	CARBON 10K 5% 1/4W		R1435	1-249-435-11	CARBON 33K 5% 1/4W	
R621	1-249-429-11	CARBON 10K 5% 1/4W		R1436	1-249-419-11	CARBON 1.5K 5% 1/4W	
R622	1-249-429-11	CARBON 10K 5% 1/4W		R1437	1-249-405-11	CARBON 100 5% 1/4W	
R623	1-249-429-11	CARBON 10K 5% 1/4W		R1438	1-249-405-11	CARBON 100 5% 1/4W	
R624	1-249-429-11	CARBON 10K 5% 1/4W		R1439	1-249-425-11	CARBON 4.7K 5% 1/4W	
R625	1-249-429-11	CARBON 10K 5% 1/4W		R1440	1-249-404-00	CARBON 82 5% 1/4W	
R626	1-249-429-11	CARBON 10K 5% 1/4W		R1441	1-249-425-11	CARBON 4.7K 5% 1/4W	
R627	1-249-429-11	CARBON 10K 5% 1/4W		R1442	1-249-404-00	CARBON 82 5% 1/4W	
R628	1-249-429-11	CARBON 10K 5% 1/4W		R1443	1-249-425-11	CARBON 4.7K 5% 1/4W	
R629	1-249-429-11	CARBON 10K 5% 1/4W		R1444	1-249-404-00	CARBON 82 5% 1/4W	
R630	1-249-429-11	CARBON 10K 5% 1/4W		R1445	1-249-425-11	CARBON 4.7K 5% 1/4W	
R631	1-249-429-11	CARBON 10K 5% 1/4W		R1446	1-249-404-00	CARBON 82 5% 1/4W	
R632	1-249-429-11	CARBON 10K 5% 1/4W		R1447	1-249-425-11	CARBON 4.7K 5% 1/4W	
R633	1-249-429-11	CARBON 10K 5% 1/4W		R1448	1-249-404-00	CARBON 82 5% 1/4W	
R634	1-249-429-11	CARBON 10K 5% 1/4W		R1449	1-249-425-11	CARBON 4.7K 5% 1/4W	
R635	1-249-429-11	CARBON 10K 5% 1/4W		R1450	1-249-404-00	CARBON 82 5% 1/4W	
R1122	1-249-421-11	CARBON 2.2K 5% 1/4W		R1451	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1123	1-249-425-11	CARBON 4.7K 5% 1/4W		R1452	1-249-404-00	CARBON 82 5% 1/4W	
R1124	1-249-433-11	CARBON 22K 5% 1/4W		R1453	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1125	1-249-433-11	CARBON 22K 5% 1/4W		R1454	1-249-437-11	CARBON 47K 5% 1/4W	
R1126	1-249-433-11	CARBON 22K 5% 1/4W		R1455	1-249-414-11	CARBON 560 5% 1/4W	
R1172	1-249-421-11	CARBON 2.2K 5% 1/4W		R1456	1-249-414-11	CARBON 560 5% 1/4W	
R1173	1-249-425-11	CARBON 4.7K 5% 1/4W		R1457	1-249-414-11	CARBON 560 5% 1/4W	
R1401	1-249-417-11	CARBON 1K 5% 1/4W		R1458	1-249-414-11	CARBON 560 5% 1/4W	
				R1459	1-249-414-11	CARBON 560 5% 1/4W	

When indicating parts by reference number, please include the board name.

PANEL**H.P****VOL****POWER**

Ref.No.	Part No.	Description	Remarks	Ref.No.	Part No.	Description	Remarks
R1460	1-249-414-11	CARBON	560 5% 1/4W	S1406	1-554-303-21	SWITCH, TACTILE (EQ REC)	
R1461	1-249-414-11	CARBON	560 5% 1/4W	S1407	1-554-303-21	SWITCH, TACTILE (△)	
R1462	1-249-414-11	CARBON	560 5% 1/4W	S1408	1-554-303-21	SWITCH, TACTILE (▽)	
R1463	1-249-411-11	CARBON	330 5% 1/4W	S1409	1-554-303-21	SWITCH, TACTILE (HALL)	
R1464	1-249-410-11	CARBON	270 5% 1/4W	S1410	1-554-303-21	SWITCH, TACTILE (DISCO)	
R1465	1-249-410-11	CARBON	270 5% 1/4W	S1411	1-554-303-21	SWITCH, TACTILE (SURROUND)	
R1466	1-249-410-11	CARBON	270 5% 1/4W	S1412	1-554-303-21	SWITCH, TACTILE (DBFB)	
R1467	1-249-410-11	CARBON	270 5% 1/4W	S1413	1-554-303-21	SWITCH, TACTILE (<)	
R1468	1-249-410-11	CARBON	270 5% 1/4W	S1414	1-554-303-21	SWITCH, TACTILE (>)	
R1469	1-249-411-11	CARBON	330 5% 1/4W	S1415	1-554-303-21	SWITCH, TACTILE (CAR)	
R1470	1-249-413-11	CARBON	470 5% 1/4W	S1416	1-554-303-21	SWITCH, TACTILE (WM)	
< VARIABLE RESISTOR >				S1417	1-554-303-21	SWITCH, TACTILE (MOVE)	
RV1101	1-241-352-11	RES, VAR, CARBON 100K/100K (BALANCE)		S1418	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
< SWITCH >				S1419	1-554-303-21	SWITCH, TACTILE (EFFECT)	
S601	1-554-303-21	SWITCH, TACTILE (1)		S1420	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S602	1-554-303-21	SWITCH, TACTILE (2)		S1421	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S603	1-554-303-21	SWITCH, TACTILE (3)		S1422	1-554-303-21	SWITCH, TACTILE (PERSONAL)	
S604	1-554-303-21	SWITCH, TACTILE (4)		< VIBRATOR >			
S605	1-554-303-21	SWITCH, TACTILE (5)		X601	1-579-564-11	VIBRATOR, CRYSTAL (8.388608MHz)	
S606	1-554-303-21	SWITCH, TACTILE (6)		*****			
S607	1-554-303-21	SWITCH, TACTILE (7)		* 1-642-384-11	H.P. BOARD		
S608	1-554-303-21	SWITCH, TACTILE (8)		*****			
S609	1-554-303-21	SWITCH, TACTILE (9)		< CAPACITOR >			
S610	1-554-303-21	SWITCH, TACTILE (0)		C1217	1-162-286-31	CERAMIC 220PF 10% 50V (G, IT)	
S611	1-554-303-21	SWITCH, TACTILE (UP)		C1267	1-162-286-31	CERAMIC 220PF 10% 50V (G, IT)	
S612	1-554-303-21	SWITCH, TACTILE (DOWN)		< CONNECTOR >			
S613	1-554-303-21	SWITCH, TACTILE (SHIFT)		CN1202	1-691-003-21	JACK, LARGE TYPE (HEADPHONES)	
S614	1-554-303-21	SWITCH, TACTILE (BAND)		*****			
S615	1-554-303-21	SWITCH, TACTILE (MEMORY)		* 1-642-385-11	VOL. BOARD		
S616	1-554-303-21	SWITCH, TACTILE (ONCE)		*****			
S617	1-554-303-21	SWITCH, TACTILE (DAILY)		< CAPACITOR >			
S618	1-554-303-21	SWITCH, TACTILE (NEXT)		C1141	1-161-379-00	CERAMIC 0.01uF 20% 25V	
S619	1-554-303-21	SWITCH, TACTILE (CLOCK)		< VARIABLE RESISTOR >			
S620	1-554-303-21	SWITCH, TACTILE (SLEEP)		RV1102	1-241-350-11	RES, VAR, CARBON 100K/100K (VOLUME)	
S621	1-554-303-21	SWITCH, TACTILE (CONTROL)		*****			
S622	1-554-303-21	SWITCH, TACTILE (CLEAR)		* A-4347-238-A	POWER BOARD, COMPLETE (AEP, G, IT, EE)		
S623	1-554-303-21	SWITCH, TACTILE (BACK)		* A-4347-364-A	POWER BOARD, COMPLETE (UK)		
S624	1-554-303-21	SWITCH, TACTILE (POWER)		*****			
S625	1-554-303-21	SWITCH, TACTILE (DISPLAY)		* 1-560-595-00	TERMINAL (WITH BASE)		
S626	1-554-303-21	SWITCH, TACTILE (ST/MUTE)		* 1-564-321-00	PIN, CONNECTOR 2P		
S627	1-554-303-21	SWITCH, TACTILE (TIMER)		* 1-638-298-11	POWER BOARD		
S628	1-554-303-21	SWITCH, TACTILE (CHARACTER)		* 1-638-299-11	FUSE BOARD		
S1401	1-554-303-21	SWITCH, TACTILE (PHONO)					
S1402	1-554-303-21	SWITCH, TACTILE (TUNER)					
S1403	1-554-303-21	SWITCH, TACTILE (CD)					
S1404	1-554-303-21	SWITCH, TACTILE (TAPE)					
S1405	1-554-303-21	SWITCH, TACTILE (VIDEO)					

When indicating parts by reference number, please include the board name.

POWER

TC SIGNAL

Ref.No.	Part No.	Description	Remarks
< CAPACITOR >			
C1301	1-161-744-00	CERAMIC 0.01uF	400V
C1330	1-136-165-00	FILM 0.1uF	5% 50V
C1331	1-124-360-00	ELECT 1000uF	20% 16V
C1332	1-124-463-00	ELECT 0.1uF	20% 50V
C1333	1-124-907-11	ELECT 10uF	20% 50V
C1335	1-162-306-11	CERAMIC 0.01uF	20% 16V
C1336	1-162-306-11	CERAMIC 0.01uF	20% 16V
C1337	1-124-907-11	ELECT 10uF	20% 50V
C1338	1-124-122-11	ELECT 100uF	20% 50V
C1339	1-124-907-11	ELECT 10uF	20% 50V
C1340	1-124-910-11	ELECT 47uF	20% 50V
C1345	1-124-477-11	ELECT 47uF	20% 25V

< CONNECTOR >

△CN1301	1-575-651-61	CORD, POWER (AEP, G, IT, EE)
△CN1301	1-575-652-21	CORD, POWER (UK)
△CN1302	1-526-794-11	OUTLET, AC (AEP, G, IT, EE)
△CN1302	1-526-751-00	OUTLET, AC (UK)

< DIODE >

D1301	8-719-987-63	DIODE 1N4148M
D1302	8-719-987-63	DIODE 1N4148M
D1317	8-719-200-82	DIODE 11ES2
D1318	8-719-200-82	DIODE 11ES2
D1319	8-719-200-82	DIODE 11ES2
D1320	8-719-200-82	DIODE 11ES2
D1321	8-719-987-63	DIODE 1N4148M
D1322	8-719-200-82	DIODE 11ES2
D1323	8-719-002-60	DIODE UZL-33L
D1324	8-719-014-66	DIODE UZF-5.6B
D1330	8-719-987-63	DIODE 1N4148M

< FUSE >

△F1301	1-532-203-00	FUSE (2.0A)
△F1302	1-532-350-00	FUSE (4.0A)
△F1303	1-532-350-00	FUSE (4.0A)
△F1304	1-532-203-00	FUSE (2.0A)
△F1305	1-532-203-00	FUSE (2.0A)

< IC >

IC1305	8-759-820-13	IC L78MR06
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< TRANSISTOR >

Q1302	8-729-141-83	TRANSISTOR 2SB1094-LK
Q1303	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q1304	8-729-119-78	TRANSISTOR 2SC2785-HFE

< RESISTOR >

△R1304	1-212-857-00	FUSIBLE 10 5% 1/4W F
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Ref.No.	Part No.	Description	Remarks
△R1305	1-212-934-00	FUSIBLE	1 5% 1/2W F
R1306	1-249-417-11	CARBON	1K 5% 1/4W
R1307	1-249-429-11	CARBON	10K 5% 1/4W
R1308	1-249-421-11	CARBON	2.2K 5% 1/4W
R1309	1-249-425-11	CARBON	4.7K 5% 1/4W
R1310	1-249-433-11	CARBON	22K 5% 1/4W
R1311	1-249-433-11	CARBON	22K 5% 1/4W

< RELAY >

RY1301	1-515-720-11	RELAY
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* A-4347-227-A TC SIGNAL BOARD, COMPLETE

< CAPACITOR >

C701	1-136-157-00	FILM 0.022uF	5% 50V
C704	1-162-288-31	CERAMIC 330PF	10% 50V
C705	1-131-587-11	TANTALUM 0.68uF	5% 35V
C706	1-124-907-11	ELECT 10uF	20% 50V
C707	1-124-902-00	ELECT 0.47uF	20% 50V
C708	1-124-907-11	ELECT 10uF	20% 50V
C709	1-124-925-11	ELECT 2.2uF	20% 100V
C710	1-124-907-11	ELECT 10uF	20% 50V
C751	1-136-157-00	FILM 0.022uF	5% 50V
C754	1-162-288-31	CERAMIC 330PF	10% 50V
C755	1-131-587-11	TANTALUM 0.68uF	5% 35V
C756	1-124-907-11	ELECT 10uF	20% 50V
C757	1-124-902-00	ELECT 0.47uF	20% 50V
C758	1-124-907-11	ELECT 10uF	20% 50V
C759	1-124-925-11	ELECT 2.2uF	20% 100V
C760	1-124-907-11	ELECT 10uF	20% 50V
C801	1-124-903-11	ELECT 1uF	20% 50V
C802	1-161-494-00	CERAMIC 0.022uF	25V
C803	1-124-925-11	ELECT 2.2uF	20% 100V
C804	1-124-443-00	ELECT 100uF	20% 10V
C805	1-124-443-00	ELECT 100uF	20% 10V
C806	1-124-907-11	ELECT 10uF	20% 50V
C807	1-124-443-00	ELECT 100uF	20% 10V
C808	1-124-443-00	ELECT 100uF	20% 10V
C901	1-124-907-11	ELECT 10uF	20% 50V
C902	1-136-165-00	FILM 0.1uF	5% 50V
C903	1-136-165-00	FILM 0.1uF	5% 50V
C904	1-124-903-11	ELECT 1uF	20% 50V
C905	1-162-288-31	CERAMIC 330PF	10% 50V
C906	1-162-288-31	CERAMIC 330PF	10% 50V

< CONNECTOR >

* CN901	1-568-850-11	SOCKET, CONNECTOR 7P
* CN902	1-568-850-11	SOCKET, CONNECTOR 7P

When indicating parts by reference number, please include the board name.

TC SIGNAL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* CN903	1-568-854-11	SOCKET, CONNECTOR 11P		Q912	8-729-119-76	TRANSISTOR 2SA1175-HFE	
CN903	1-580-783-11	CONNECTOR, BOARD TO BOARD		Q913	8-729-900-61	TRANSISTOR DTA114ES	
CN904	1-506-469-11	CONNECTOR 4P, MALE		Q914	8-729-900-89	TRANSISTOR DTC144ES	
* CN905	1-568-830-11	SOCKET, CONNECTOR 11P		Q915	8-729-116-57	TRANSISTOR 2SB1068-K	
* CN906	1-564-508-11	PLUG, CONNECTOR 5P		Q916	8-729-116-57	TRANSISTOR 2SB1068-K	
CN907	1-580-783-11	CONNECTOR, BOARD TO BOARD		< RESISTOR >			
CN909	1-580-783-11	CONNECTOR, BOARD TO BOARD		R701	1-249-421-11	CARBON 2.2K 5% 1/4W	
< CONNECTOR >				R702	1-249-423-11	CARBON 3.3K 5% 1/4W	
* CNP801	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P		R703	1-247-887-00	CARBON 220K 5% 1/4W	
* CNP901	1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P		R708	1-249-434-11	CARBON 27K 5% 1/4W	
< DIODE >				R709	1-249-419-11	CARBON 1.5K 5% 1/4W	
D801	8-719-987-63	DIODE 1N4148M		R710	1-249-425-11	CARBON 4.7K 5% 1/4W	
D802	8-719-933-50	DIODE HZS7C2L		R711	1-249-426-11	CARBON 5.6K 5% 1/4W	
D803	8-719-933-50	DIODE HZS7C2L		R712	1-249-425-11	CARBON 4.7K 5% 1/4W	
D804	8-719-001-18	DIODE UZL-9M3		R713	1-249-421-11	CARBON 2.2K 5% 1/4W	
D901	8-719-987-63	DIODE 1N4148M		R714	1-249-421-11	CARBON 2.2K 5% 1/4W	
D902	8-719-987-63	DIODE 1N4148M		R715	1-249-421-11	CARBON 2.2K 5% 1/4W	
< IC >				R716	1-249-425-11	CARBON 4.7K 5% 1/4W	
IC801	8-759-634-51	IC M5218AP		R717	1-249-421-11	CARBON 2.2K 5% 1/4W	
IC803	8-759-140-53	IC MC14053BCP		R751	1-249-421-11	CARBON 2.2K 5% 1/4W	
IC805	8-752-057-21	IC CXA1100P		R752	1-249-423-11	CARBON 3.3K 5% 1/4W	
IC806	8-752-060-64	IC CXA1198AP		R753	1-247-887-00	CARBON 220K 5% 1/4W	
IC807	8-759-000-48	IC uPD4052BC-A		R758	1-249-434-11	CARBON 27K 5% 1/4W	
IC901	8-759-207-05	IC TA7272P		R759	1-249-419-11	CARBON 1.5K 5% 1/4W	
IC902	8-759-636-69	IC M50964-251FP		R760	1-249-425-11	CARBON 4.7K 5% 1/4W	
< TRANSISTOR >				R761	1-249-426-11	CARBON 5.6K 5% 1/4W	
Q701	8-729-900-74	TRANSISTOR DTC143TS		R762	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE		R763	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE		R764	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q751	8-729-900-74	TRANSISTOR DTC143TS		R765	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q752	8-729-119-78	TRANSISTOR 2SC2785-HFE		R766	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q753	8-729-119-78	TRANSISTOR 2SC2785-HFE		R767	1-249-421-11	CARBON 2.2K 5% 1/4W	
Q801	8-729-900-61	TRANSISTOR DTA114ES		R801	1-249-441-11	CARBON 100K 5% 1/4W	
Q802	8-729-900-61	TRANSISTOR DTA114ES		R802	1-249-417-11	CARBON 1K 5% 1/4W	
Q803	8-729-900-61	TRANSISTOR DTA114ES		R803	1-249-441-11	CARBON 100K 5% 1/4W	
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE		R804	1-249-427-11	CARBON 6.8K 5% 1/4W	
Q902	8-729-119-78	TRANSISTOR 2SC2785-HFE		R805	1-249-413-11	CARBON 470 5% 1/4W	
Q903	8-729-119-76	TRANSISTOR 2SA1175-HFE		R806	1-249-429-11	CARBON 10K 5% 1/4W	
Q904	8-729-900-61	TRANSISTOR DTA114ES		R807	1-249-413-11	CARBON 470 5% 1/4W	
Q905	8-729-900-80	TRANSISTOR DTC114ES		R808	1-247-870-11	CARBON 43K 5% 1/4W	
Q906	8-729-119-76	TRANSISTOR 2SA1175-HFE		R809	1-249-431-11	CARBON 15K 5% 1/4W	
Q907	8-729-119-78	TRANSISTOR 2SC2785-HFE		R810	1-215-460-00	METAL 43K 1% 1/6W	
Q908	8-729-119-78	TRANSISTOR 2SC2785-HFE		R811	1-249-437-11	CARBON 47K 5% 1/4W	
Q910	8-729-900-61	TRANSISTOR DTA114ES		R812	1-249-437-11	CARBON 47K 5% 1/4W	
Q911	8-729-119-76	TRANSISTOR 2SA1175-HFE		R813	1-247-887-00	CARBON 220K 5% 1/4W	
				R814	1-247-864-11	CARBON 24K 5% 1/4W	
				R815	1-249-405-11	CARBON 100 5% 1/4W	
				R816	1-249-405-11	CARBON 100 5% 1/4W	
				R817	1-249-436-11	CARBON 39K 5% 1/4W	

When indicating parts by reference number, please include the board name.

TC SIGNAL

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R818	1-249-435-11	CARBON	33K 5% 1/4W	R922	1-247-895-00	CARBON	470K 5% 1/4W
R819	1-249-432-11	CARBON	18K 5% 1/4W	R923	1-249-421-11	CARBON	2.2K 5% 1/4W
R820	1-247-878-00	CARBON	91K 5% 1/4W	R924	1-249-421-11	CARBON	2.2K 5% 1/4W
R821	1-247-881-00	CARBON	120K 5% 1/4W	R925	1-249-425-11	CARBON	4.7K 5% 1/4W
R822	1-249-437-11	CARBON	47K 5% 1/4W	R926	1-249-434-11	CARBON	27K 5% 1/4W
R823	1-247-862-11	CARBON	20K 5% 1/4W	R927	1-249-429-11	CARBON	10K 5% 1/4W
R824	1-247-868-11	CARBON	36K 5% 1/4W	R928	1-249-429-11	CARBON	10K 5% 1/4W
R825	1-249-433-11	CARBON	22K 5% 1/4W	R929	1-249-434-11	CARBON	27K 5% 1/4W
R826	1-247-876-11	CARBON	75K 5% 1/4W	R930	1-249-429-11	CARBON	10K 5% 1/4W
R827	1-247-868-11	CARBON	36K 5% 1/4W	R931	1-249-429-11	CARBON	10K 5% 1/4W
R828	1-247-878-00	CARBON	91K 5% 1/4W	R932	1-249-429-11	CARBON	10K 5% 1/4W
R829	1-247-874-11	CARBON	62K 5% 1/4W	R933	1-249-422-11	CARBON	2.7K 5% 1/4W
R830	1-249-437-11	CARBON	47K 5% 1/4W	R934	1-249-422-11	CARBON	2.7K 5% 1/4W
R831	1-249-433-11	CARBON	22K 5% 1/4W	R935	1-249-422-11	CARBON	2.7K 5% 1/4W
R832	1-247-878-00	CARBON	91K 5% 1/4W	R936	1-247-860-11	CARBON	16K 5% 1/4W
R833	1-247-881-00	CARBON	120K 5% 1/4W	R937	1-247-862-11	CARBON	20K 5% 1/4W
R834	1-247-876-11	CARBON	75K 5% 1/4W	R938	1-249-425-11	CARBON	4.7K 5% 1/4W
R835	1-247-868-11	CARBON	36K 5% 1/4W	R939	1-249-437-11	CARBON	47K 5% 1/4W
R836	1-249-438-11	CARBON	56K 5% 1/4W	R940	1-247-866-11	CARBON	30K 5% 1/4W
R837	1-249-432-11	CARBON	18K 5% 1/4W	R941	1-247-860-11	CARBON	16K 5% 1/4W
R838	1-249-434-11	CARBON	27K 5% 1/4W	R942	1-247-862-11	CARBON	20K 5% 1/4W
R839	1-249-440-11	CARBON	82K 5% 1/4W	R943	1-249-425-11	CARBON	4.7K 5% 1/4W
R840	1-249-440-11	CARBON	82K 5% 1/4W	R944	1-249-437-11	CARBON	47K 5% 1/4W
R841	1-249-417-11	CARBON	1K 5% 1/4W	R945	1-247-866-11	CARBON	30K 5% 1/4W
R842	1-249-409-11	CARBON	220 5% 1/4W	R946	1-247-872-11	CARBON	51K 5% 1/4W
R843	1-249-417-11	CARBON	1K 5% 1/4W	R947	1-247-872-11	CARBON	51K 5% 1/4W
R844	1-249-429-11	CARBON	10K 5% 1/4W	R948	1-249-405-11	CARBON	100 5% 1/4W
R845	1-249-429-11	CARBON	10K 5% 1/4W	R949	1-247-872-11	CARBON	51K 5% 1/4W
R846	1-249-429-11	CARBON	10K 5% 1/4W	R950	1-247-872-11	CARBON	51K 5% 1/4W
R847	1-249-405-11	CARBON	100 5% 1/4W	R951	1-249-405-11	CARBON	100 5% 1/4W
R848	1-249-405-11	CARBON	100 5% 1/4W	R952	1-249-415-11	CARBON	680 5% 1/4W
R901	1-249-412-11	CARBON	390 5% 1/4W	R953	1-249-415-11	CARBON	680 5% 1/4W
R902	1-249-412-11	CARBON	390 5% 1/4W	R954	1-249-429-11	CARBON	10K 5% 1/4W
R903	1-249-415-11	CARBON	680 5% 1/4W	R955	1-249-429-11	CARBON	10K 5% 1/4W
R904	1-249-415-11	CARBON	680 5% 1/4W	R971	1-249-429-11	CARBON	10K 5% 1/4W
R905	1-249-409-11	CARBON	220 5% 1/4W	R972	1-247-903-00	CARBON	1M 5% 1/4W
R906	1-249-416-11	CARBON	820 5% 1/4W	R973	1-249-417-11	CARBON	1K 5% 1/4W
R907	1-249-409-11	CARBON	220 5% 1/4W	R974	1-249-417-11	CARBON	1K 5% 1/4W
R908	1-249-412-11	CARBON	390 5% 1/4W	R975	1-249-429-11	CARBON	10K 5% 1/4W
R909	1-249-412-11	CARBON	390 5% 1/4W				
R910	1-249-412-11	CARBON	390 5% 1/4W				
R911	1-247-820-11	CARBON	360 5% 1/4W				
R913	1-249-420-11	CARBON	1.8K 5% 1/4W				
R915	1-249-429-11	CARBON	10K 5% 1/4W				
R916	1-249-425-11	CARBON	4.7K 5% 1/4W				
R917	1-249-417-11	CARBON	1K 5% 1/4W				
R918	1-249-429-11	CARBON	10K 5% 1/4W				
R919	1-249-429-11	CARBON	10K 5% 1/4W				
R920	1-249-441-11	CARBON	100K 5% 1/4W				
R921	1-247-895-00	CARBON	470K 5% 1/4W				

< VARIABLE RESISTOR >

RV701 1-230-721-11 RES, ADJ, CARBON 10K (REC LEVEL)
RV751 1-230-721-11 RES, ADJ, CARBON 10K (REC LEVEL)

< VIBRATOR >

X901 1-577-358-21 VIBRATOR, CERAMIC (4.0MHz)

When indicating parts by reference number, please include the board name.

DISPLAY

TC SW

Ref. No.	Part No.	Description	Remarks
*	1-642-153-11	DISPLAY BOARD *****	
		< CONNECTOR >	
* CN903-	1-568-854-11	SOCKET, CONNECTOR 11P *****	
		< DIODE >	
D903	8-719-301-52	LED SEL2810A-C (<) (DECK A)	
D904	8-719-301-52	LED SEL2810A-C (>) (DECK A)	
D905	8-719-301-38	LED SEL2210S-C (DUB H)	
D906	8-719-301-38	LED SEL2210S-C (DUB N)	
D907	8-719-301-44	LED SEL2410E-D (PLAY) (DECK A)	
D908	8-719-301-38	LED SEL2210S-C (O) (DECK B)	
D909	8-719-301-44	LED SEL2410E-D (PLAY) (DECK B)	
D910	8-719-301-52	LED SEL2810A-C (□) (DECK B)	
D911	8-719-301-52	LED SEL2810A-C (<) (DECK B)	
D912	8-719-301-52	LED SEL2810A-C (>) (DECK B)	

*	1-642-152-11	TC SW BOARD *****	
		< RESISTOR >	
R956	1-249-407-11	CARBON 150 5% 1/4W	
R957	1-249-409-11	CARBON 220 5% 1/4W	
R958	1-249-411-11	CARBON 330 5% 1/4W	
R959	1-249-413-11	CARBON 470 5% 1/4W	
R960	1-249-415-11	CARBON 680 5% 1/4W	
R961	1-249-417-11	CARBON 1K 5% 1/4W	
R962	1-249-420-11	CARBON 1.8K 5% 1/4W	
R963	1-249-407-11	CARBON 150 5% 1/4W	
R964	1-249-409-11	CARBON 220 5% 1/4W	
R965	1-249-411-11	CARBON 330 5% 1/4W	
R966	1-249-413-11	CARBON 470 5% 1/4W	
R967	1-249-415-11	CARBON 680 5% 1/4W	
R968	1-249-417-11	CARBON 1K 5% 1/4W	
R969	1-249-426-11	CARBON 5.6K 5% 1/4W	
R970	1-249-430-11	CARBON 12K 5% 1/4W	
R1472	1-249-433-11	CARBON 22K 5% 1/4W	
R1480	1-249-417-11	CARBON 1K 5% 1/4W	
		< SWITCH >	
S901	1-572-268-11	SWITCH, SLIDE (RELY)	
S902	1-572-269-11	SWITCH, SLIDE (DOLBY SW)	
S903	1-554-303-21	SWITCH, TACTILE (□) (DECK A)	
S904	1-554-303-21	SWITCH, TACTILE (>) (DECK A)	
S905	1-554-303-21	SWITCH, TACTILE (<) (DECK A)	
S906	1-554-303-21	SWITCH, TACTILE (<<) (DECK B)	
S907	1-554-303-21	SWITCH, TACTILE (>>) (DECK B)	
S908	1-554-303-21	SWITCH, TACTILE (O) (DECK B)	

Ref. No.	Part No.	Description	Remarks
S909	1-554-303-21	SWITCH, TACTILE (DUB H)	
S910	1-554-303-21	SWITCH, TACTILE (DUB N)	
S911	1-554-303-21	SWITCH, TACTILE (□) (DECK B)	
S912	1-554-303-21	SWITCH, TACTILE (□) (DECK B)	
S913	1-554-303-21	SWITCH, TACTILE (>) (DECK B)	
S914	1-554-303-21	SWITCH, TACTILE (<) (DECK B)	
S915	1-554-303-21	SWITCH, TACTILE (⊕) (DECK B)	
S916	1-554-303-21	SWITCH, TACTILE (<<) (DECK A)	
S917	1-554-303-21	SWITCH, TACTILE (>>) (DECK A)	

		MISCELLANEOUS *****	
4	1-533-217-31	HOLDER, FUSE	
* 10	1-690-948-11	WIRE (FLAT TYPE) (19 CORE)	
11	1-590-577-11	WIRE, FLAT TYPE (17 CORE)	
12	1-590-576-11	WIRE, FLAT TYPE (11 CORE)	
61	1-590-575-11	WIRE, FLAT TYPE (11 CORE)	
115	1-590-459-11	WIRE, FLAT TYPE (11 CORE)	
116	1-590-574-11	WIRE, FLAT TYPE (7 CORE)	
172	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
* HP901	A-2003-757-A	BASE ASSY, HEAD (DECK A)	
HRP901	A-2003-930-A	BASE ASSY, HEAD (DECK B)	
M901A	X-3359-417-1	MOTOR ASSY, CAPSTAN (DECK A)	
M901B	X-3359-417-1	MOTOR ASSY, CAPSTAN (DECK B)	
M902A	X-3363-501-1	MOTOR ASSY, REEL (DECK A)	
M902B	X-3363-501-1	MOTOR ASSY, REEL (DECK B)	
△T1301	1-450-787-11	TRANSFORMER, POWER	
△T1302	1-450-397-21	TRANSFORMER, POWER	

		ACCESSORIES & PACKING MATERIALS *****	
		1-465-697-11 REMOTE COMMANDER	
		1-501-369-11 ANTENNA (IT)	
		1-501-374-11 ANTENNA, LOOP (IT)	
* 3-703-713-41	STICKER, SONY SYMBOL (10)		
3-707-584-01	COVER, BATTERY		
3-754-671-11	MANUAL, INSTRUCTION (English) (UK)		
3-754-671-41	MANUAL, INSTRUCTION (English, German, Spanish, Portuguese) (AEP)		
3-754-671-51	MANUAL, INSTRUCTION (German, Dutch, Swedish, Italian) (AEP/G/IT)		
3-754-671-61	MANUAL, INSTRUCTION (English, German, Polish, Russian) (EE)		
4-921-934-01	SHEET, PROTECTION		
* 4-949-865-01	CUSHION		
* 4-951-306-01	INDIVIDUAL CARTON (IT)		
4-951-625-01	LABEL, POP (UK)		
4-952-200-01	LABEL, EAN CODE (UK)		
4-952-721-01	LABEL, PTT APPROVAL (IT)		

When indicating parts by reference number, please include the board name.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
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HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-682-548-04	SCREW +BVTT 3X8 (S)	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#5	7-627-556-08	SCREW +P 2. 6X2. 8	
#6	7-621-775-00	SCREW +B 2. 6X3	

PS-LX49/LX49P

SERVICE MANUAL



Photo : PS-LX49

AEP Model
E Model
PX Model
Tourist Model
PS-LX49
Australian Model
PS-LX49P

SPECIFICATIONS

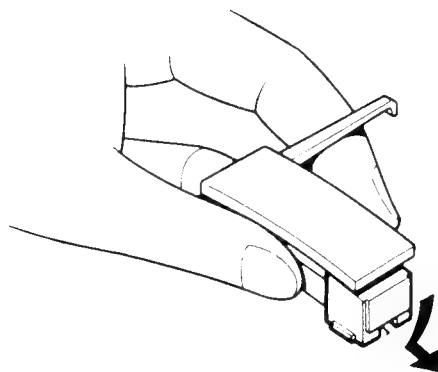
Turntable	
Platter	30cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33 1/3 rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	60 dB (DIN-B)
Automatic system	Return, reject
Tonearm	
Type	Dynamically balanced
Pivot-to-stylus length	203 mm (8 in.)
Overall arm length	235 mm (9 1/4 in.)
Cartridge	
Type	Moving magnet type
Frequency response	20 Hz-20kHz
Stylus	CN-234
General	
Dimensions	355 × 94 × 345 mm(w/h/d) (14 × 3 3/4 × 13 3/4 inches)
Weight	Approx. 2.5 kg (5 lb 8 oz)
Power requirement	AEP, Italian, Germany model: 220-230 V AC, 50/60 Hz PX, Tourist, E, Saudi Arabia model: 110-120 V/220-240V AC, Adjustable with the voltage selector, 50/60 Hz Australia model 12V DC
Power consumption	2 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus CN-234 Stat spray XP-C10 Cleaner XP-C1, XP-C2

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records. An CN-234 replacement stylus is available at your Sony dealer.

Be sure to turn the amplifier off before proceeding with replacement.

- 1 While holding the cartridge, detach the stylus assembly as illustrated.
- 2 Insert the new stylus into the cartridge.

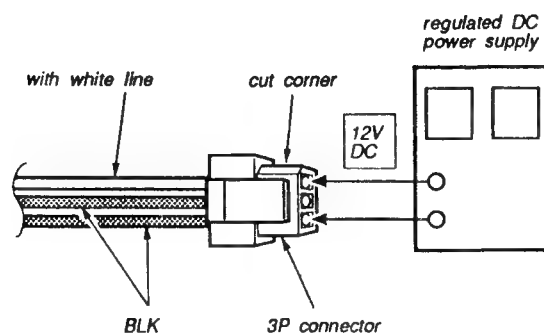
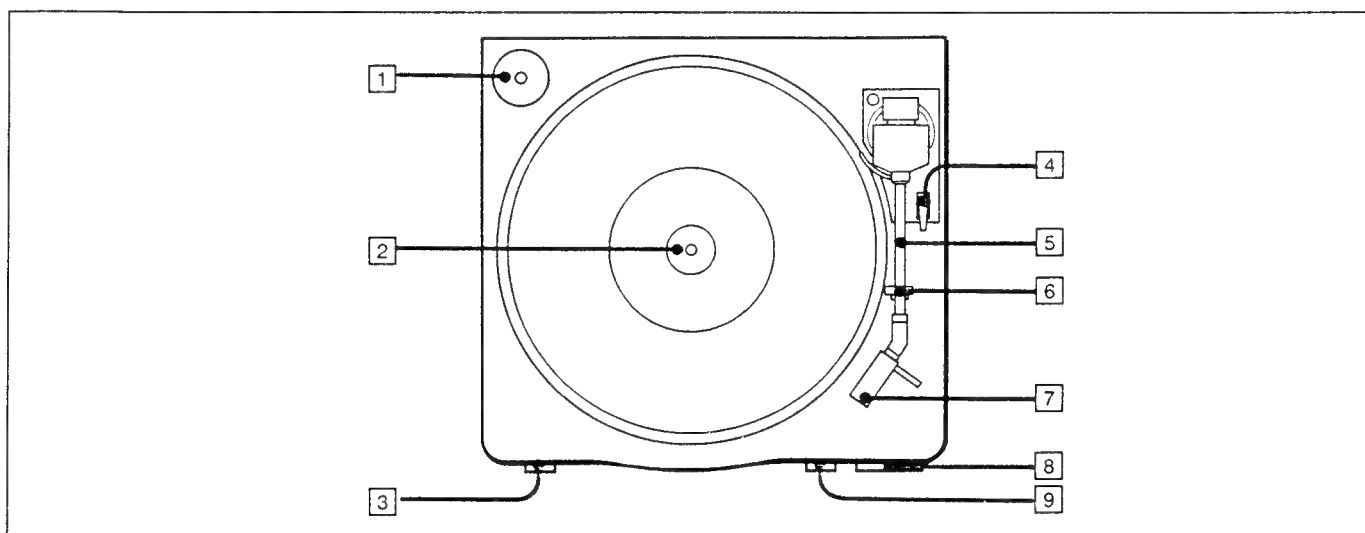


MC-Service

STEREO TURNTABLE SYSTEM
SONY®

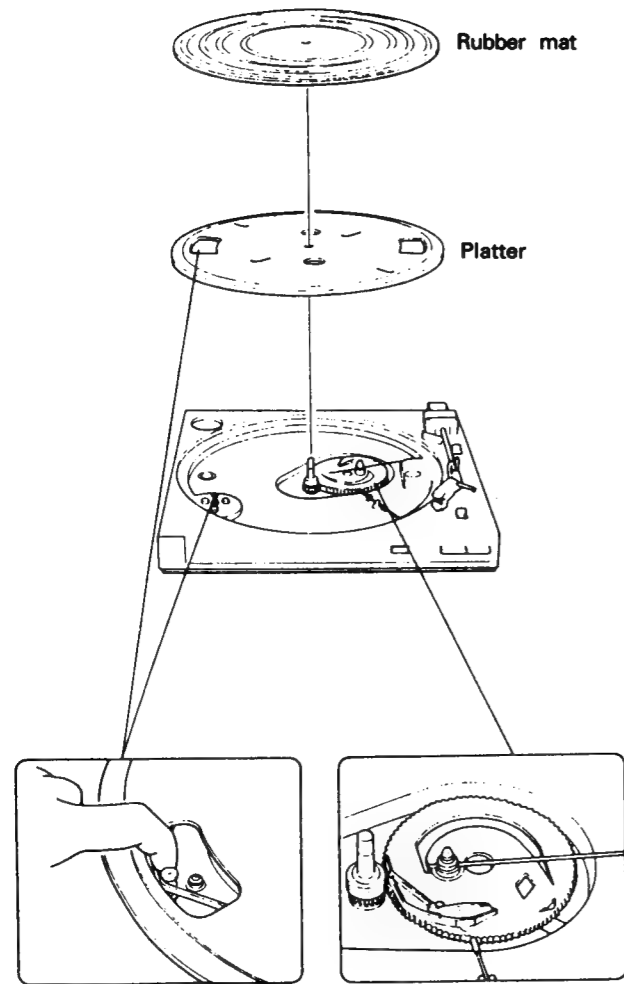
REPAIRING PRECAUTION (PS-LX49P only)**[To supply B+ voltage]**

The power of this unit is fed from HST model. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.

**LOCATION OF CONTROLS**

- 1 45-rpm adaptor
- 2 Center spindle
- 3 POWER switch (PS-LX49 only)
- 4 Cueing lever
- 5 Tonearm
- 6 Arm rest
- 7 Cartridge
- 8 REJECT button
- 9 Speed selector

TURNTABLE ASSEMBLY

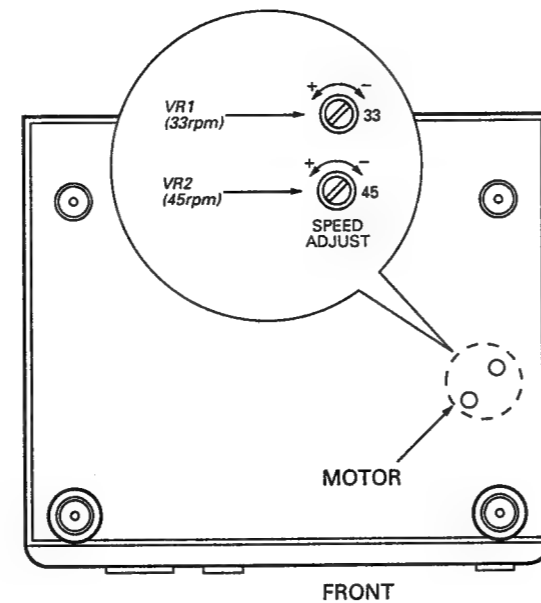


Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Speed Adjustment

Note: Be sure to perform 45rpm adjustment before 33rpm.

1. Place a stroboscope board on the turntable sheet.
Press the START button.
Adjust VR2 so that the striped pattern of stroboscope board is stationary.
2. Set the SPEED switch to 45.
Adjust VR1 in the same way.

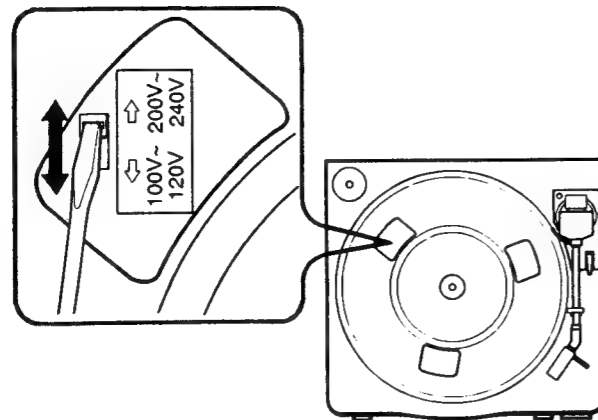


Setting the Voltage Selector

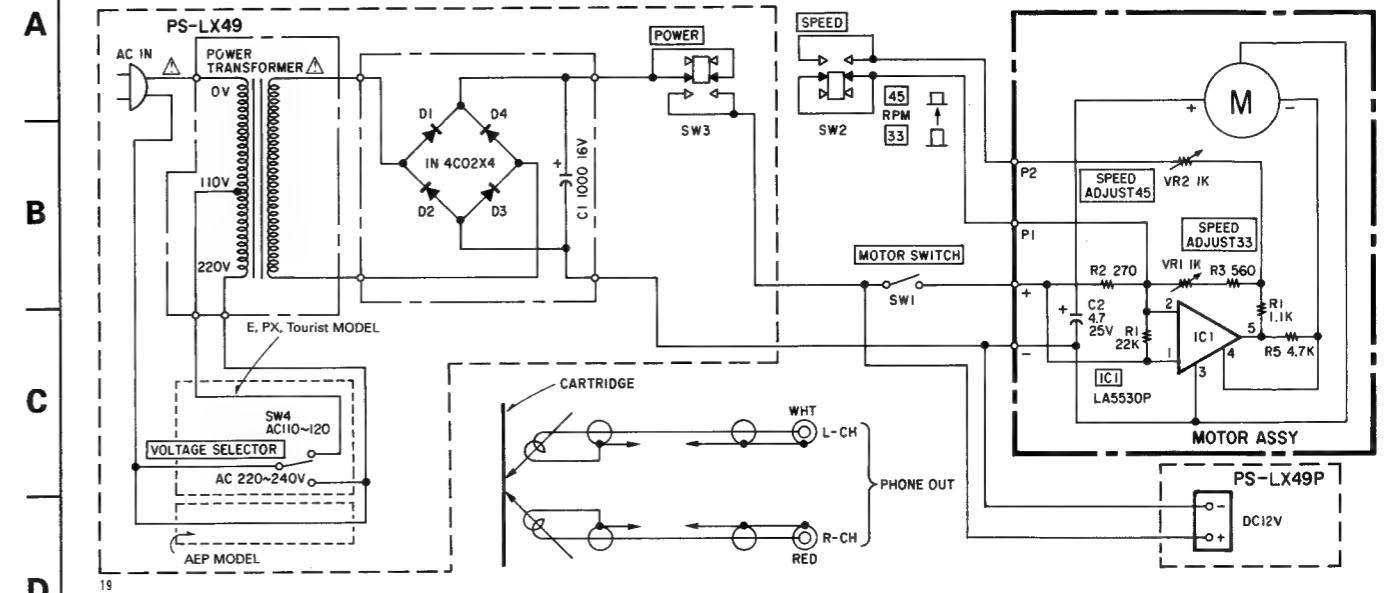
PS-LX49 (E, Saudi Arabia, PX, Tourist model)

For customers of the model equipped with the voltage selector

Check to confirm that the voltage selector is set to the local power line voltage. If not, set the voltage selector to the correct position before connecting the AC power cord to a wall outlet.



SCHEMATIC DIAGRAM



NOTE:

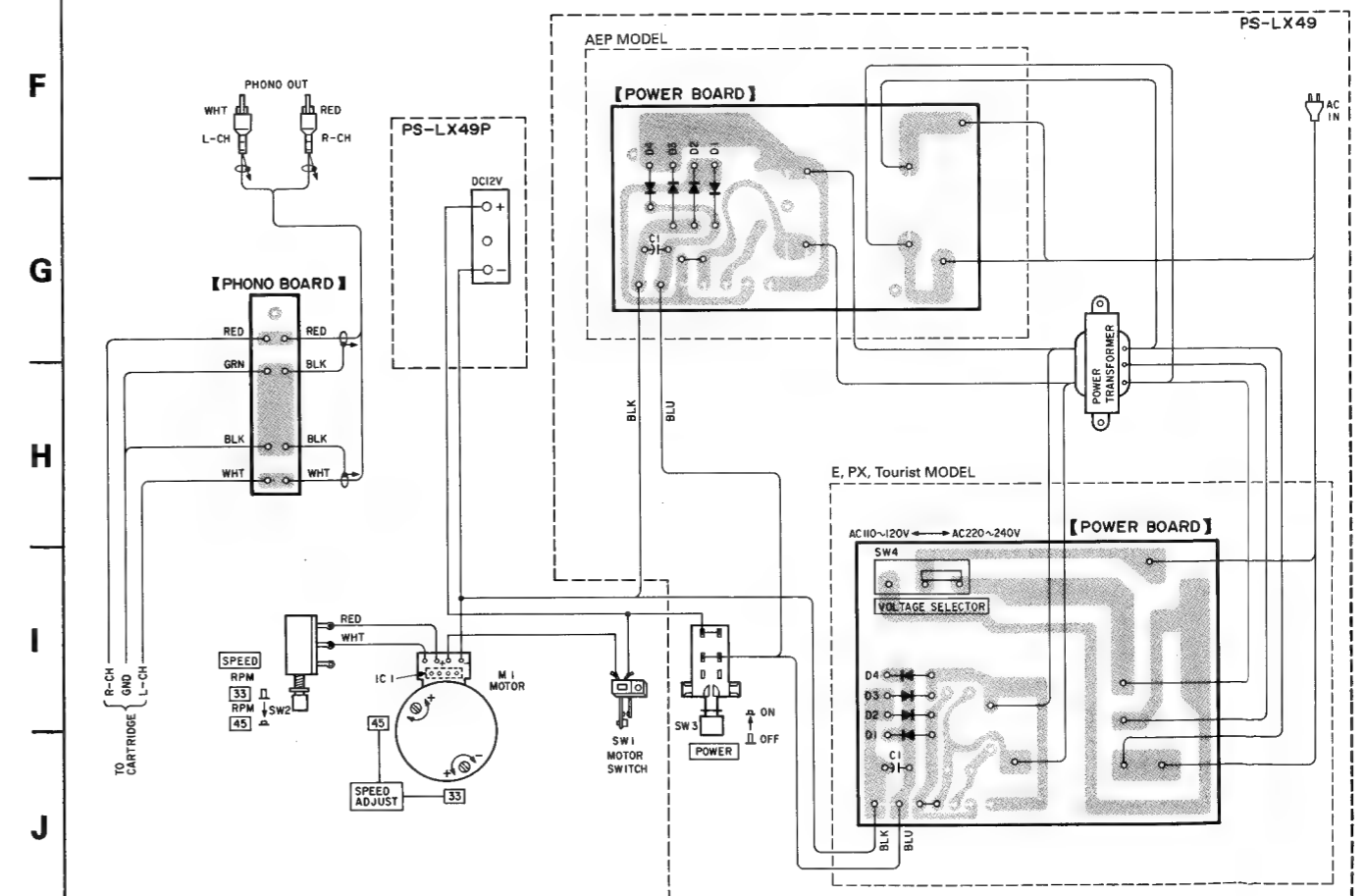
- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.

Switches:

Ref.No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

WIRING DIAGRAM



EXPLODED VIEW

NOTE:

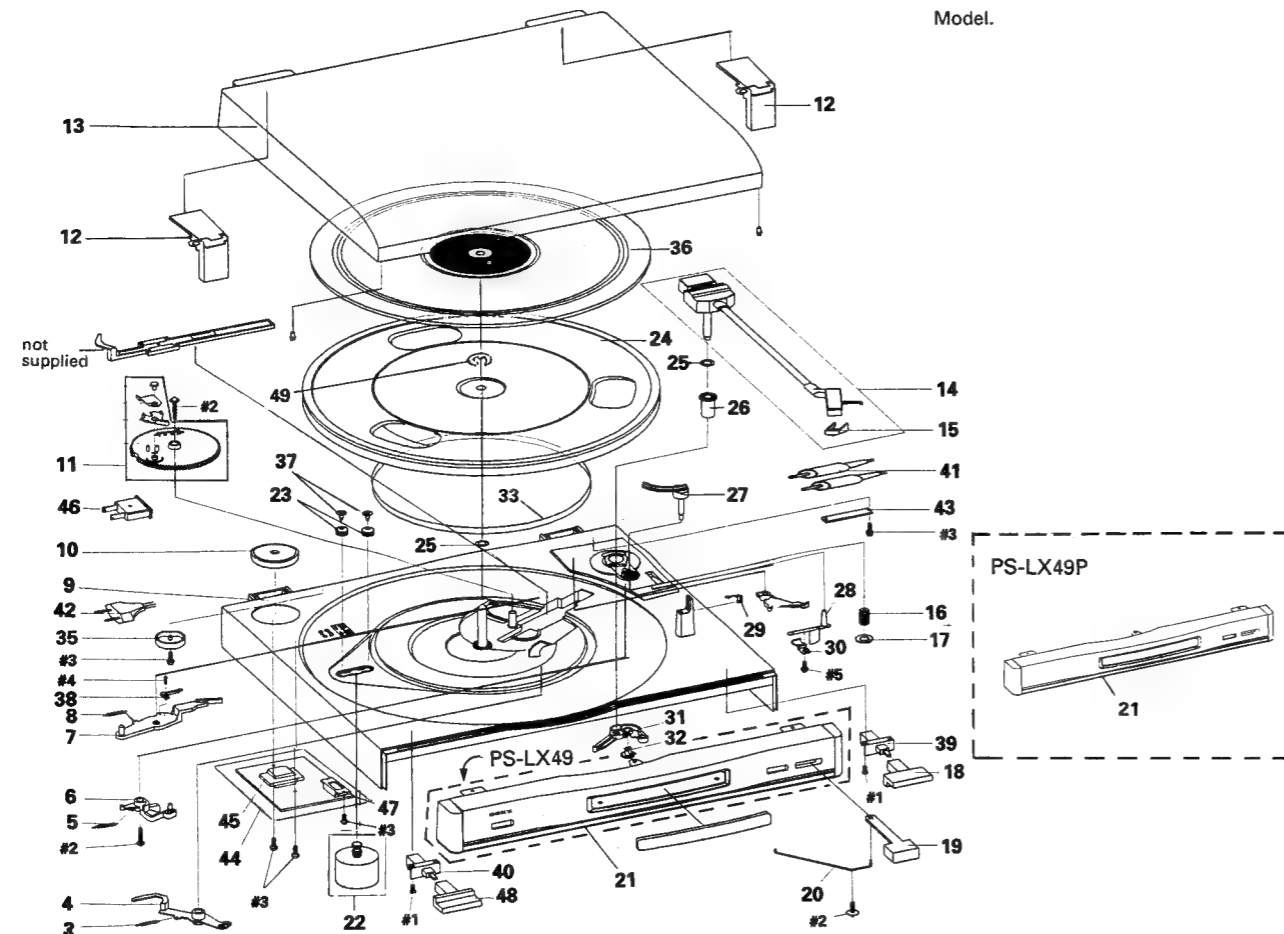
- XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

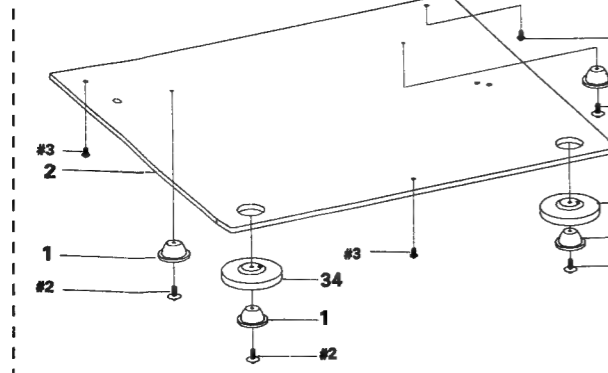
- Screw(# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

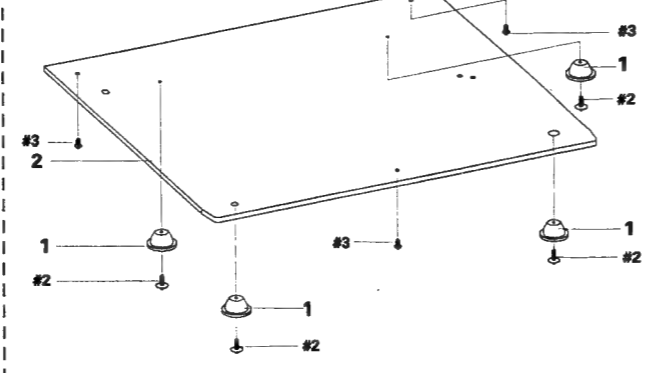
- PX and Tourist Models are identical to E Model.



E/Australian Model



AEP Model



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	4-950-472-01	FOOT		5	4-950-455-01	SPRING-ELEVATOR	
* 2	4-950-471-01	COVER-BOTTOM (AUS, E)		6	4-950-454-01	ELEVATOR	
* 2	4-953-061-01	COVER-BOTTOM (AEP)		7	4-950-463-01	ARM-CONTROL	
3	4-950-453-01	SPRING-REJECT		8	4-950-464-01	SPRING-CONTROL ARM	
4	4-950-452-01	LEVER-REJECT		* 9	4-950-431-01	CABINET-UPPER	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
10	4-950-467-01	ADAPTOR-45RPM		30	4-950-441-01	BRACKET-CUEING	
11	A-4660-140-A	GEAR ASSY, RING		31	4-950-450-01	ARM-FEED	
12	4-950-432-01	HINGE		32	4-950-451-01	CAM-ADJUST	
13	A-4660-138-A	COVER ASSY, DUST		33	4-950-434-01	BELT	
14	A-4660-139-A	ARM ASSY, TONE		34	4-950-474-01	COVER-FOOT (AUS, E)	
15	4-951-290-01	STYLUS (CN-234)		* 35	4-950-514-01	WASHER CODE (AEP, E)	
16	4-950-442-01	SPRING-ELEVATION		36	A-4660-142-A	RUBBER ASSY, SHEET	
17	4-950-444-01	WASHER-C/S		37	4-950-469-01	SCREW-SETTING MOTOR	
18	4-950-445-01	BUTTON-SPEED		38	1-572-746-11	SWITCH, LEAF	
19	4-950-447-01	BUTTON-REJECT		39	1-572-744-11	SWITCH, PUSH (2 KEY) (SPEED)	
20	4-950-448-01	LINK-REJECT		Δ 40	1-572-744-11	SWITCH, PUSH (POWER) (LX49)	
21	A-4660-137-A	PANEL (G) ASSY, FRONT (LX49P) (AUS)		41	1-590-871-11	CORD, CONNECTION (3 CORE)	
21	A-4660-143-A	PANEL (G) ASSY, FRONT (LX49) (AEP, E)		42	1-558-943-11	CORD, POWER (LX49) (E)	
22	A-4660-141-A	MOTOR ASSY		42	1-558-944-11	CORD, POWER (LX49) (AEP)	
23	4-950-470-01	CUSHION-MOTOR		43	1-639-237-11	PHONE BOARD	
24	4-950-433-01	PLATTER		Δ 44	1-639-239-11	POWER BOARD (LX49) (E)	
25	4-950-435-01	SPACER		Δ 44	1-639-236-11	POWER BOARD (LX49) (AEP)	
26	4-950-436-01	BUSHING-TONE ARM		Δ 45	1-450-508-11	TRANSFORMER, POWER (LX49)	
27	4-950-437-01	ARM-ELEVATION		Δ 46	1-693-159-11	ADAPTER, AC (LX49) (E)	
28	4-950-440-01	LEVER-CUEING		Δ 47	1-572-745-11	VOLTAGE SELECTOR (LX49) (E)	
29	4-950-439-01	LOCKER-ARM		48	4-950-513-01	BUTTON POWER (AEP, E)	
				49	4-953-059-01	E RING	

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

- XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS
In each case, u : μ , for example :
uA... : μ A..., uPA... : μ PA...,
uPB... : μ PB..., uPC... : μ PC...,
uPD... : μ PD...
- CAPACITORS
MF : μ F, PF : μ F
- COILS
MMH : mH, uH : μ H
- PX and Tourist Models are identical to E Model.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
MISCELLANEOUS *****				ACCESSORIES & PACKING MATERIALS *****			
38	1-572-746-11	SWITCH, LEAF		* 4-950-496-01	SNOW BOX (L)		
39	1-572-744-11	SWITCH, PUSH (2 KEY) (SPEED)		* 4-950-503-01	SNOW BOX (R)		
Δ 40	1-572-744-11	SWITCH, PUSH (POWER) (LX49)		* 4-950-504-01	CARTON (AUS)		
41	1-590-871-11	CORD, CONNECTION (3 CORE)		* 4-950-515-01	CARTON (E)		
Δ 42	1-558-943-11	CORD, POWER (LX49) (E)		3-754-841-11	MANUAL, INSTRUCTION (English, French, Spanish, Portuguese) (AEP, E)		
Δ 42	1-558-944-11	CORD, POWER (LX49) (AEP)		3-754-841-41	MANUAL, INSTRUCTION (German, Dutch, Swedish, Italian) (AEP)		
Δ 44	1-639-236-11	POWER BOARD (LX49) (AEP)		*****			
Δ 44	1-639-239-11	POWER BOARD (LX49) (E)		HARDWARE LIST			
Δ 45	1-450-508-11	TRANSFORMER, POWER (LX49)		#1	7-685-246-19	SCREW +KTP 3X8 TYPE2 NON-SLIT	
Δ 47	1-572-745-11	VOLTAGE SELECTOR (LX49) (E)		#2	7-685-903-21	SCREW +PTFWH 3X8 TYPE2	
*****				#3	7-685-546-19	SCREW	
				#4	7-685-104-11	SCREW +P 2X6 TYPE2 NON-SLIT	

MC-Service

9-956-955-31

Sony Corporation

Audio Group

- 6 -

Published by Customer Relations and Service Group

English
92C1960-1
Printed in Japan
© 1992.3

CDP-M33

SERVICE MANUAL

*US Model
AEP Model
UK Model
E Model
Australian Model*



Model Name Using Similar Mechanism	CDP - M54
CD Mechanism Name	CDM14L-5BD8A
Optical Pick-up Block Type	BU-5BD8A

SPECIFICATIONS

Compact disc player

Frequency response 2 Hz to 20 kHz 0.5 dB
Signal-to-noise ratio More than 93 dB
Dynamic range More than 90 dB
Harmonic distortion Less than 0.008%
Channel separation More than 90 dB

Outputs

LINE OUT (FIXED)

Output level 2 V (at 50 kilohms)
Load impedance over 10 kilohms

General

Power requirements U.S. model:
120 V AC, 60 Hz
UK, Australian model:
240VAC, 50Hz
AEP, Italian model:
220 - 230VAC, 50/60 Hz
E, Saudi Arabia Model:
110 - 120 V/220 - 240 V
AC, adjustable with the
voltage selector, 50/60 Hz

Power consumption 11 W

Dimensions (approx., including projections)

355 × 95 × 325 mm (w/h/d)
(14 × 3 7/8 × 12 1/8 inches)

Weight (approx.) 3.2 kg (7 lbs 1 oz)

Supplied accessories

Audio cord (1) (2 phono plugs - 2
phono plugs)
AC plug adaptor (1) (except for the United
States and Australia)

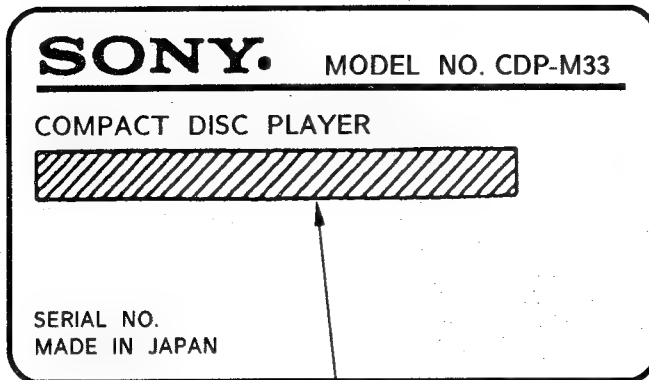
Design and specifications are subject to change
without notice.



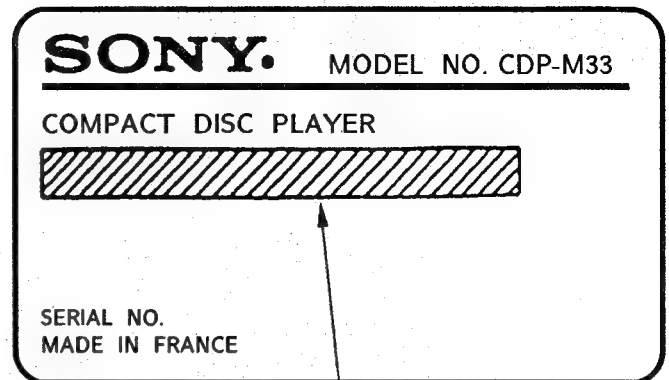
COMPACT DISC PLAYER
SONY®

MODEL IDENTIFICATION

- Specification Label -



US Model : AC 120V 60Hz 11W
 AEP, Italian Model : AC 220 - 230V ~ 50/60Hz
 Australian Model : AC 240V ~ 50/60Hz
 E, Saudi Arabia Model : AC 110 - 120V, 220 - 240V,
 ~ 50/60Hz 11W



AEP Model : AC 220 - 230V ~ 50/60Hz
 UK Model : AC 240V, ~ 50/60Hz

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

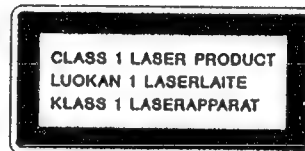
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

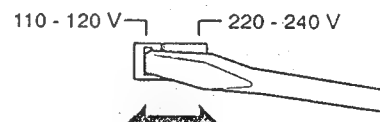
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30cm away from the objective lens.



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

E, Saudi Arabia Model

For customers of the model equipped with the voltage selector
 Check to confirm that the voltage selector is set to the local power line voltage. If not, set the voltage selector to the correct position before connecting the AC power cord to a wall outlet.



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

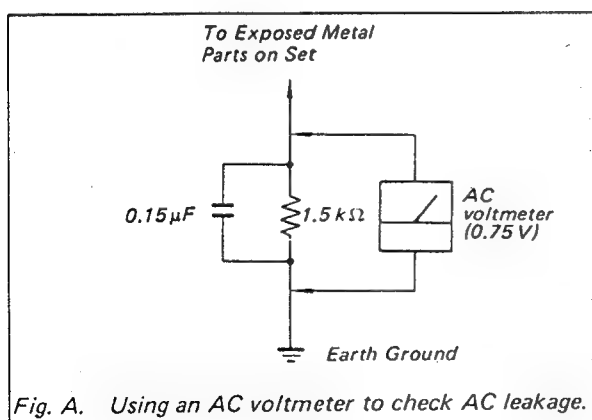


TABLE OF CONTENTS

Section	Title	Page
1. GENERAL		4
2. DISASSEMBLY		6
3. ELECTRICAL BLOCK CHECKING		7
4. DIAGRAMS		
4-1.	Block Diagram	9
4-2.	Circuit Boards Location	12
4-3.	Semiconductor Lead Layouts	12
4-4.	Printed Wiring Boards	13
4-5.	Schematic Diagram	17
4-6.	IC Block Diagram	21
5. EXPLODED VIEWS		
5-1.	Cabinet Section	23
5-2.	MD Section	25
5-3.	Pick-up Block Section	26
6. ELECTRICAL PARTS LIST		27

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

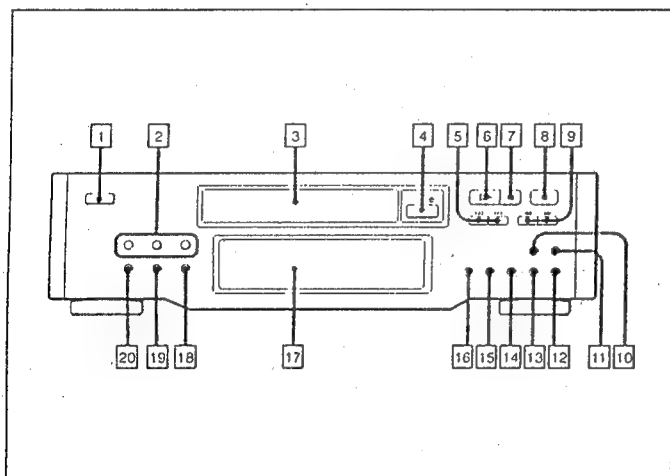
SECTION 1 GENERAL

This section is extracted from instruction manual.

Identifying the Parts

Refer to the pages indicated in parenthesis for details.

Front Panel



- 1 POWER switch (16)
- 2 Play mode buttons
CONTINUE button (24, 28, 32, 50)
SHUFFLE button (24, 28, 32, 50)
PROGRAM button (28, 42)
- 3 Disc tray (16)
- 4 ▲ OPEN/CLOSE button (16)
- 5 ◀◀/▶▶ (AMS*) buttons (20, 42)
- 6 ▶ (play) button (18)
- 7 || (pause) button (18)
- 8 ■ (stop) button (18)
- 9 ◀◀/▶▶ (manual search) buttons (20, 40)
- 10 CHECK (program check) button (30)
- 11 CLEAR (program clear) button (30, 36)
- 12 MUSIC SCAN button (34)
- 13 A. SPACE/A. CUE button (22, 54)
- 14 PEAK SEARCH button (54)
- 15 TIME SET button (48, 52)
- 16 EDIT/TIME FADE button (46, 52)
- 17 Display window (16)
- 18 FADER button (40)
- 19 REPEAT button (38)
- 20 TIME button (18)

* AMS is the abbreviation of Automatic Music Sensor.

SECTION 2 DISASSEMBLY

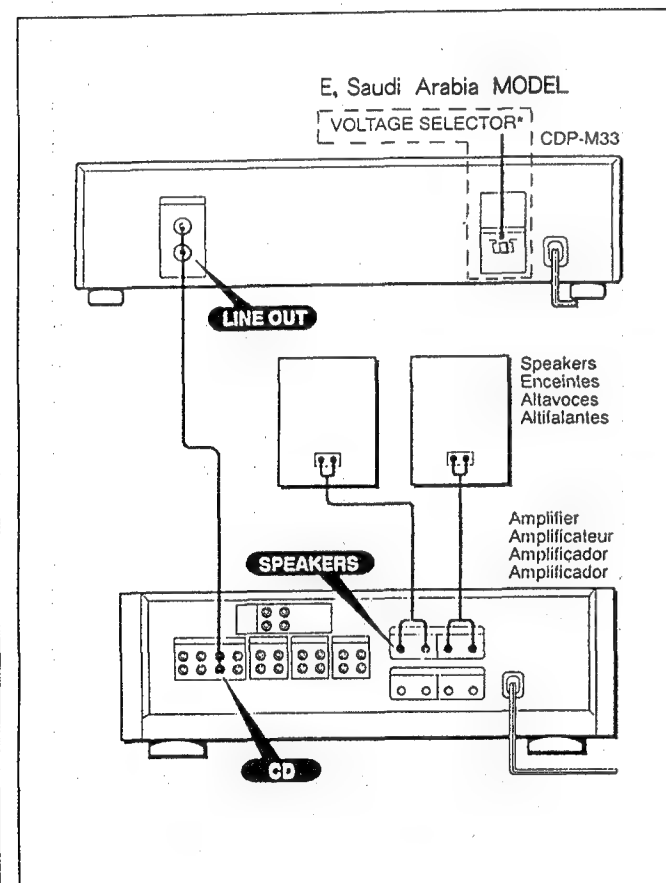
Hooking Up the System

Connect the unit to an amplifier as shown in Figure.

Notes on Connection

- Turn off the power of each unit before making connections. Connect the AC power cord last. For the model supplied with the plug adaptor, use it if the power cord plug does not match your wall outlet.
- Be sure to insert the plugs firmly into the jacks. Loose connection may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.

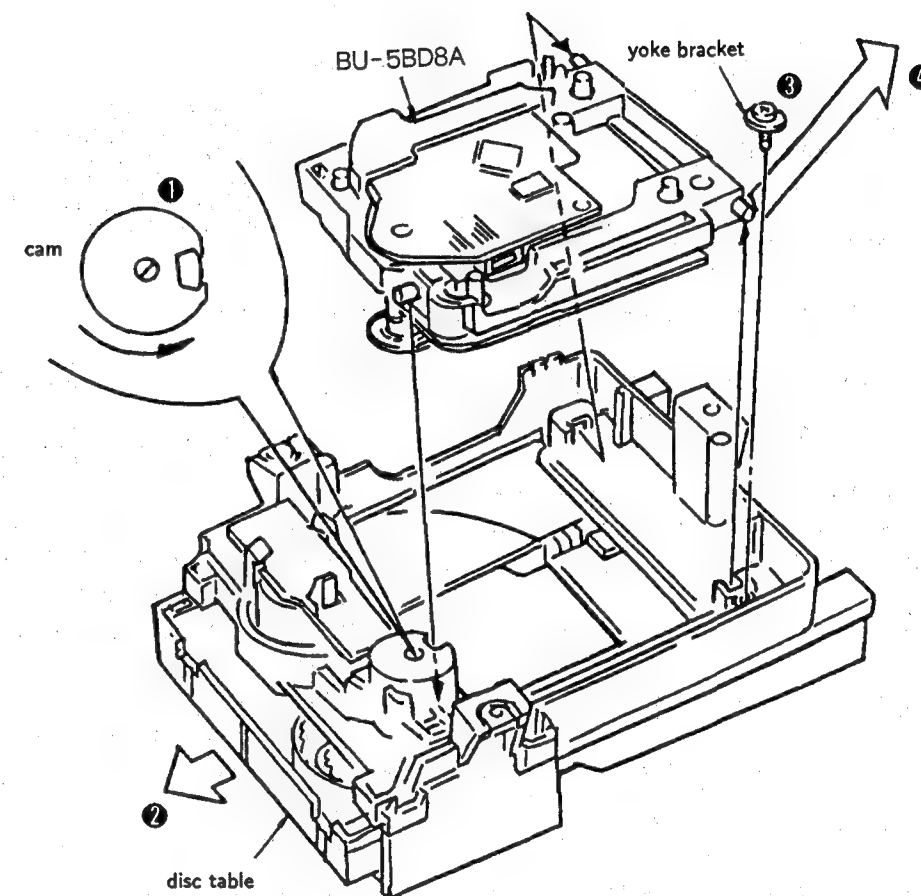
* VOLTAGE SELECTOR: Not equipped with the model for the United States and Australia.



Note:

Follow the disassembly procedure in the numerical order given.

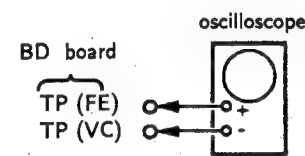
- 1 Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.
- 2 Take off the disc table.
- 3 Remove the yoke bracket.
- 4 Remove the MD (BU-5BD8A) to the direction of arrow.



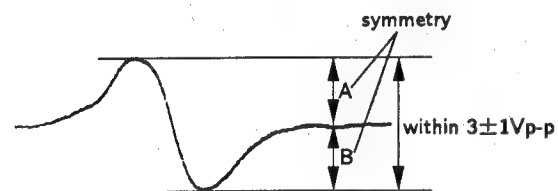
SECTION 3 ELECTRICAL BLOCK CHECKING

Note :

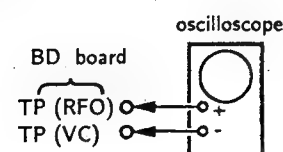
1. CD Block basically constructed to operate with-out adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10M Ω im-pedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check**Procedure :**

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3\pm 1V_{p-p}$.

S curve waveform

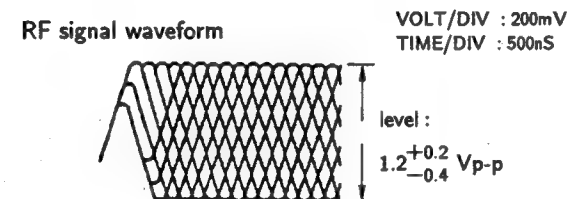
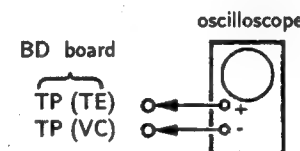
5. After check, remove the lead wire connected in step 2.
- Note :**
- Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
 - Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check**Procedure :**

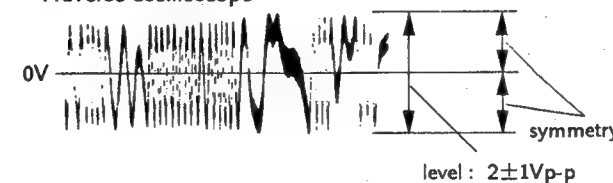
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

**E-F Balance Check****Procedure :**

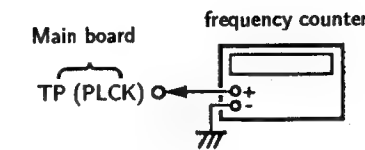
1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is sym-metrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check**Procedure :**

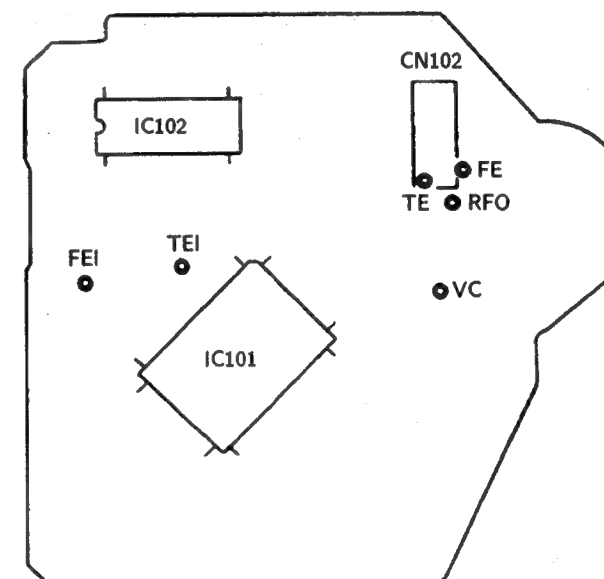
1. Connect frequency counter to test point (PLCK) with lead wire.



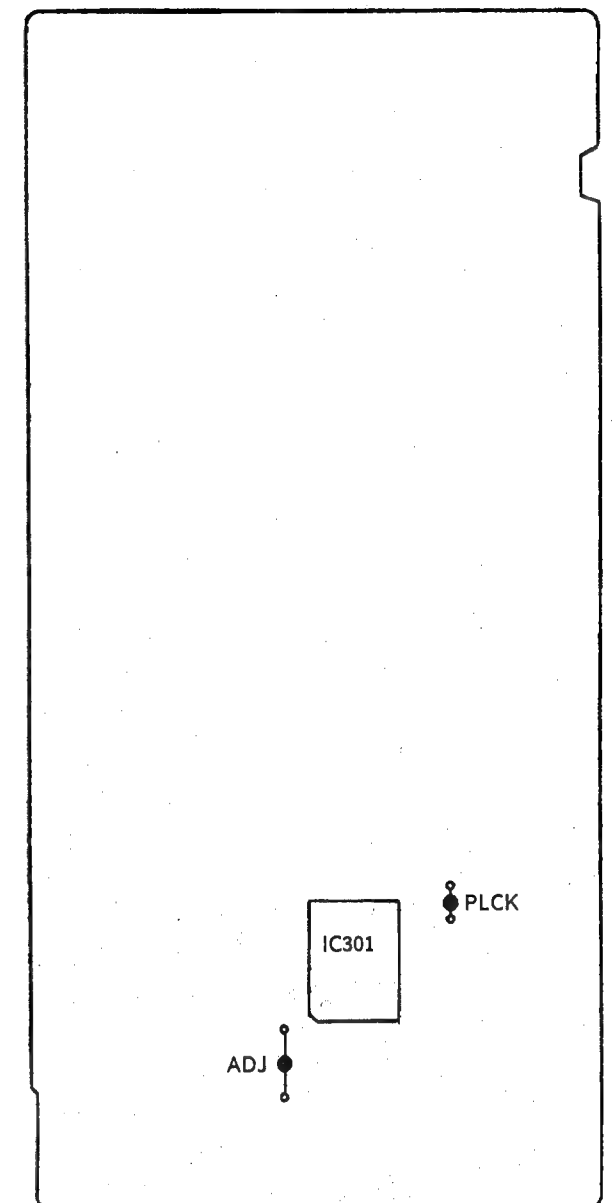
2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218 MHz.

Adjustment Location :**[BD BOARD]**

- Solder side -

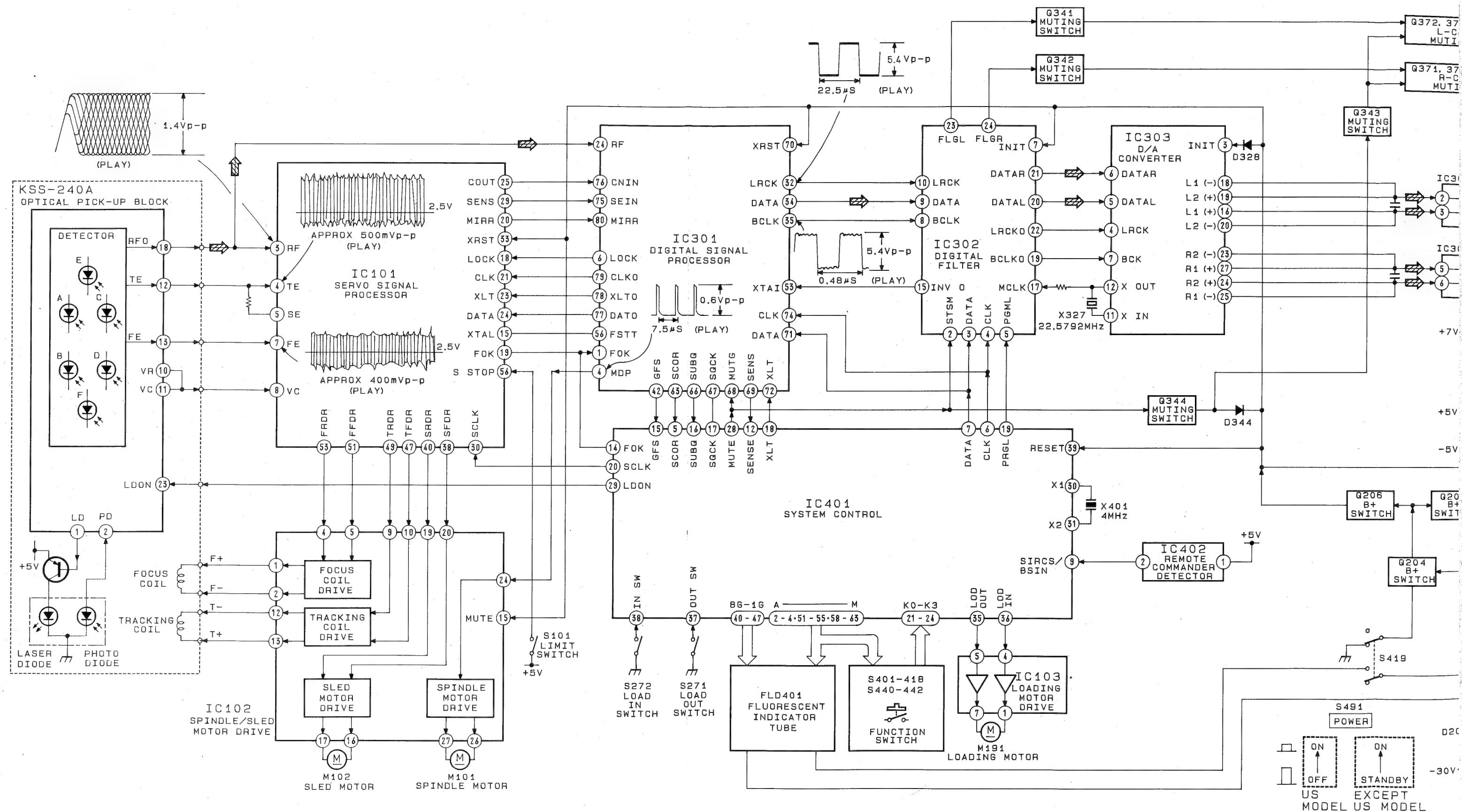
**[MAIN BOARD]**

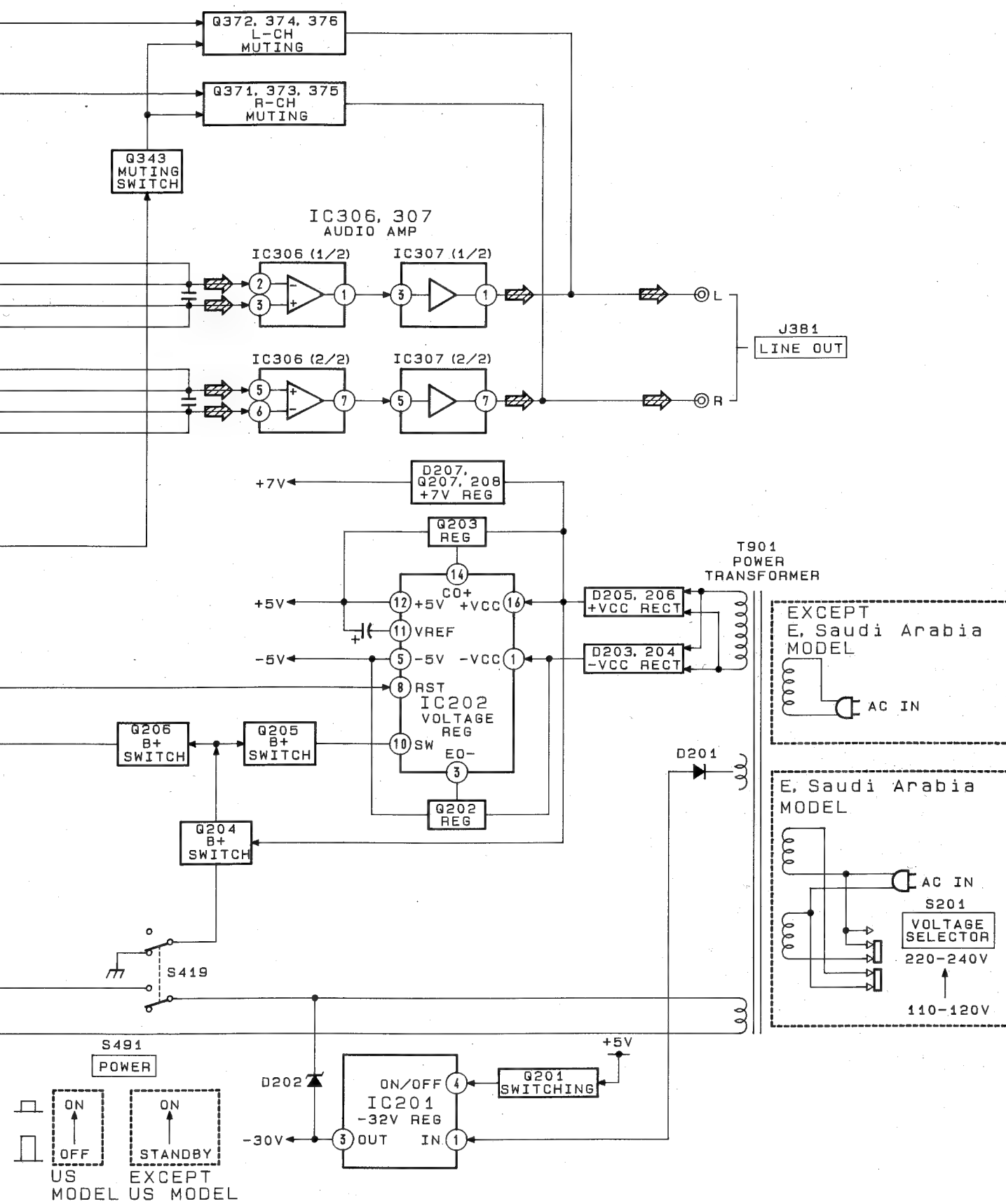
- Component side -



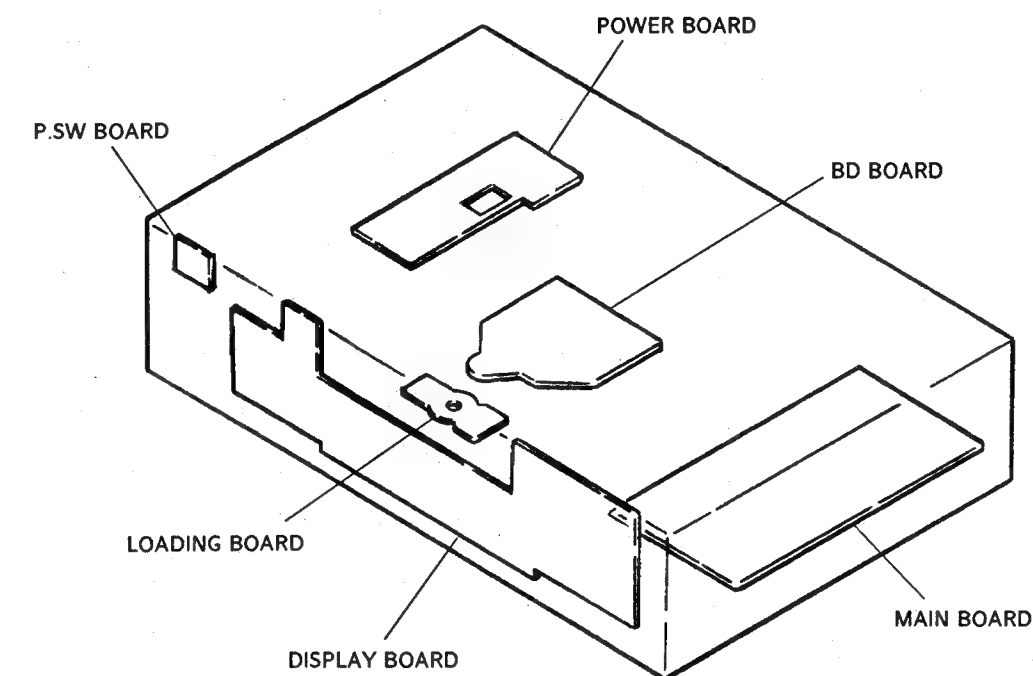
SECTION 4 DIAGRAMS

4-1. BLOCK DIAGRAM



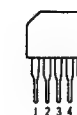


4-2. CIRCUIT BOARDS LOCATION

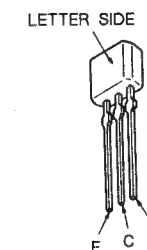


4-3. SEMICONDUCTOR LEAD LAYOUTS

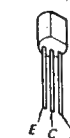
M5293L



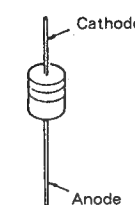
2SA1175-HFE



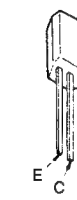
2SC2878-AB



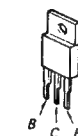
RD5.6ES-B2
RD7.5ES-B2
RD7.5JS-B2
RD9.1ES-L
WG713A



DTA144ES
DTC143TS
DTC144ES
2SC2458-YGR



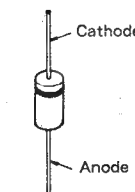
2SB1094-LK



2SD774-34



1N4148M



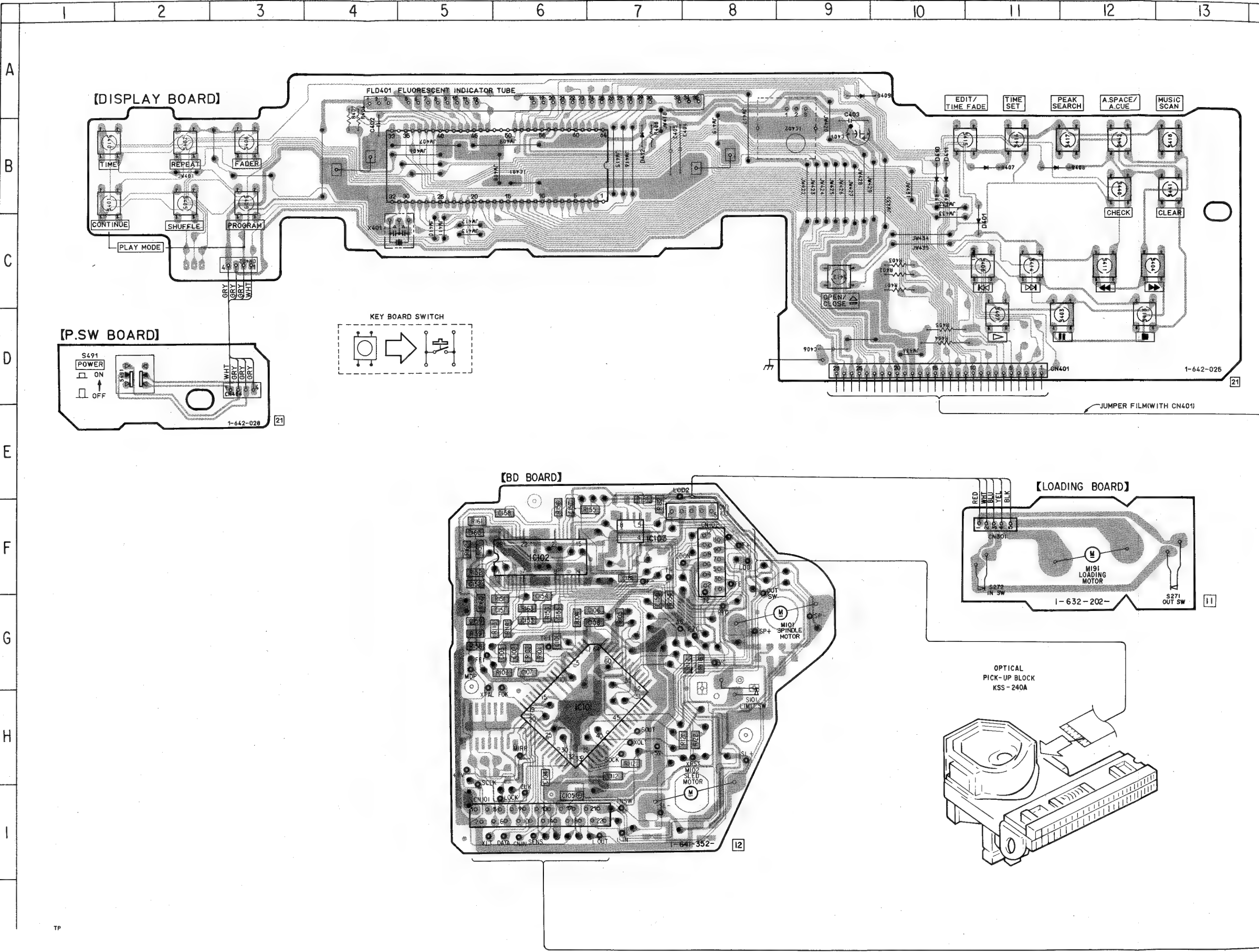
4-4. PRINTED WIRING BOARDS

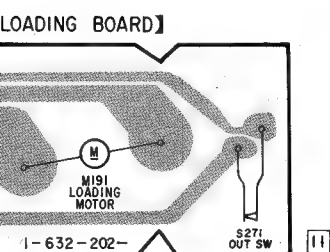
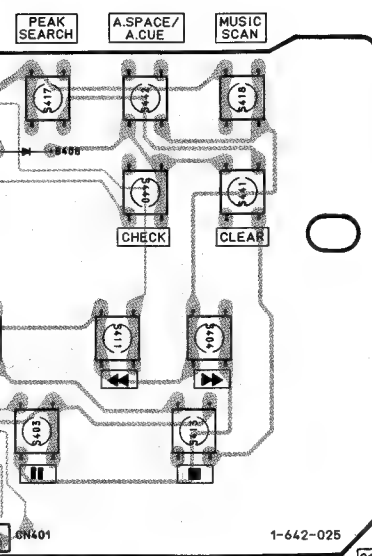
Semiconductor Location

Ref. No.	Location
D201	H-22
D202	J-22
D203	H-21
D204	H-21
D205	H-21
D206	H-20
D207	F-18
D208	C-18
D209	C-18
D328	F-15
D344	G-15
D401	C-11
D407	B-11
D408	B-11
D409	A-9
D410	B-10
D411	B-10
D412	B-7
IC101	H-6
IC102	F-6
IC103	F-7
IC201	I-22
IC202	E-17
IC301	H-16
IC302	G-16
IC303	E-16
IC306	C-16
IC307	C-16
IC401	B-6
IC402	B-9
Q201	I-22
Q202	D-18
Q203	D-17
Q204	G-17
Q205	G-17
Q206	G-17
Q207	F-18
Q208	F-18
Q341	D-15
Q342	D-15
Q343	C-15
Q344	G-15
Q371	B-16
Q372	C-18
Q373	B-16
Q374	B-18
Q375	B-16
Q376	B-18

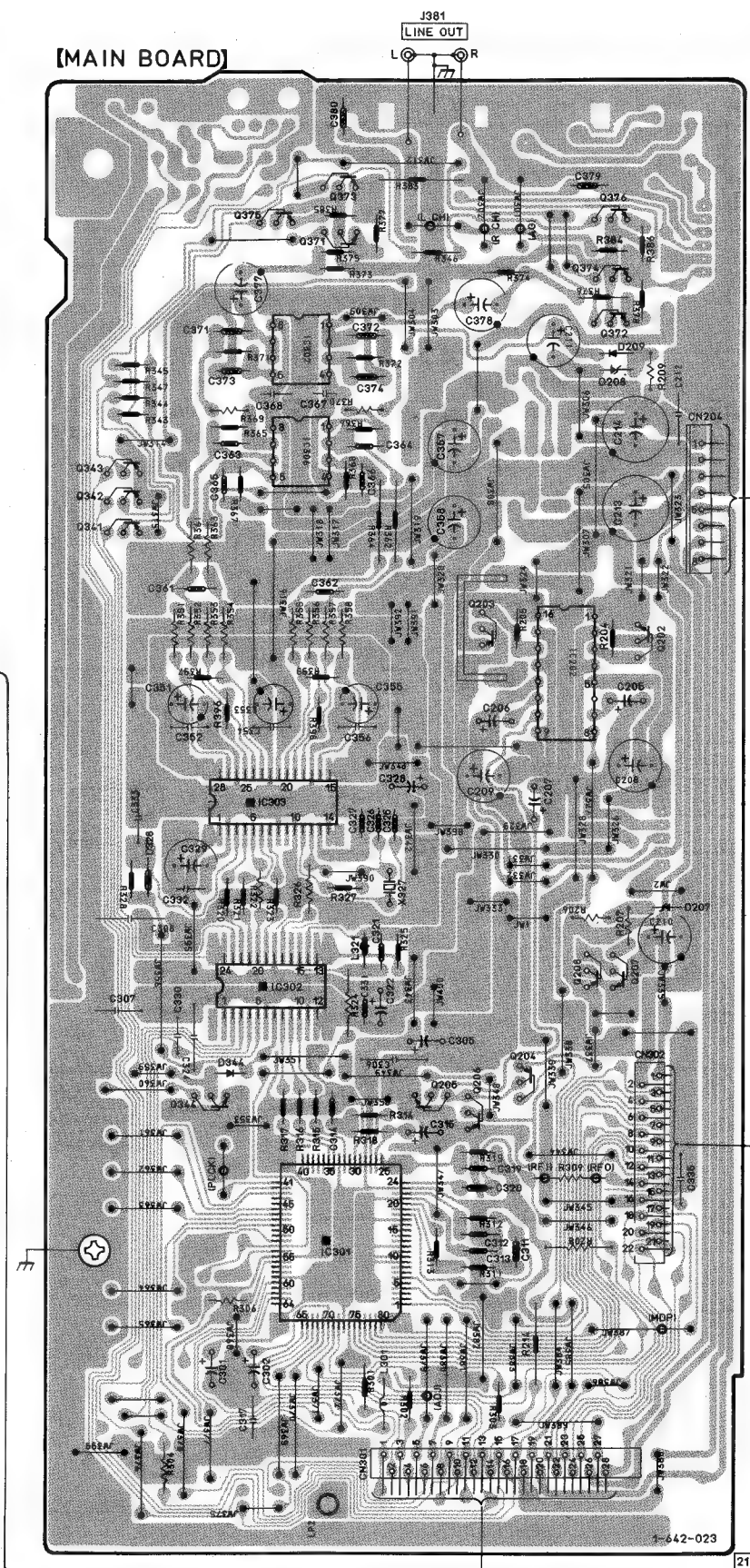
Note on Mounting Diagram :

- — : Parts extracted from the component side.
- : Parts mounted on the conductor side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.

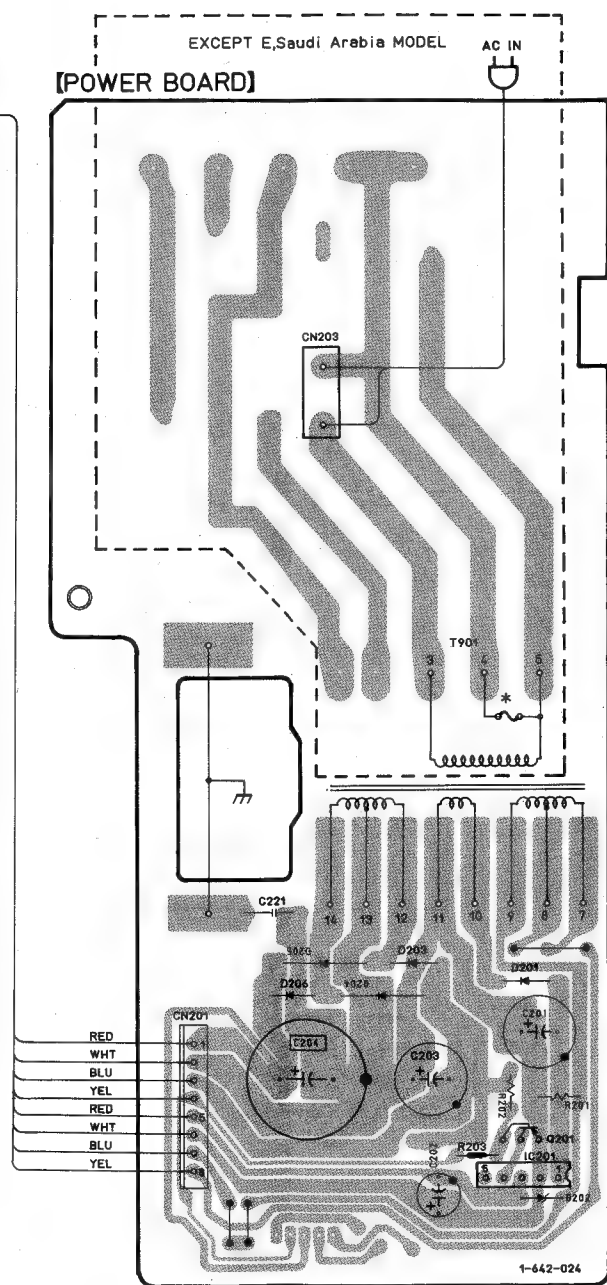




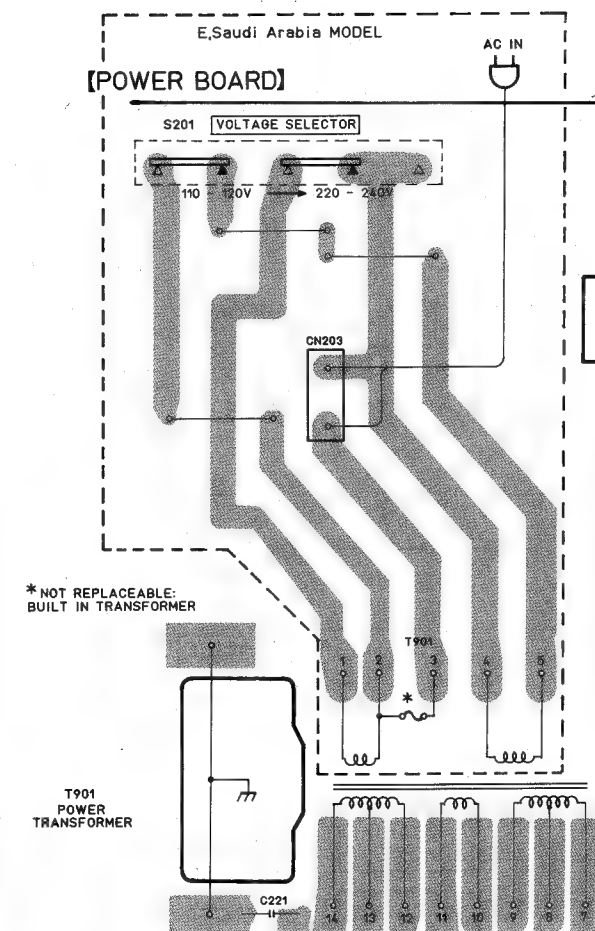
[MAIN BOARD]



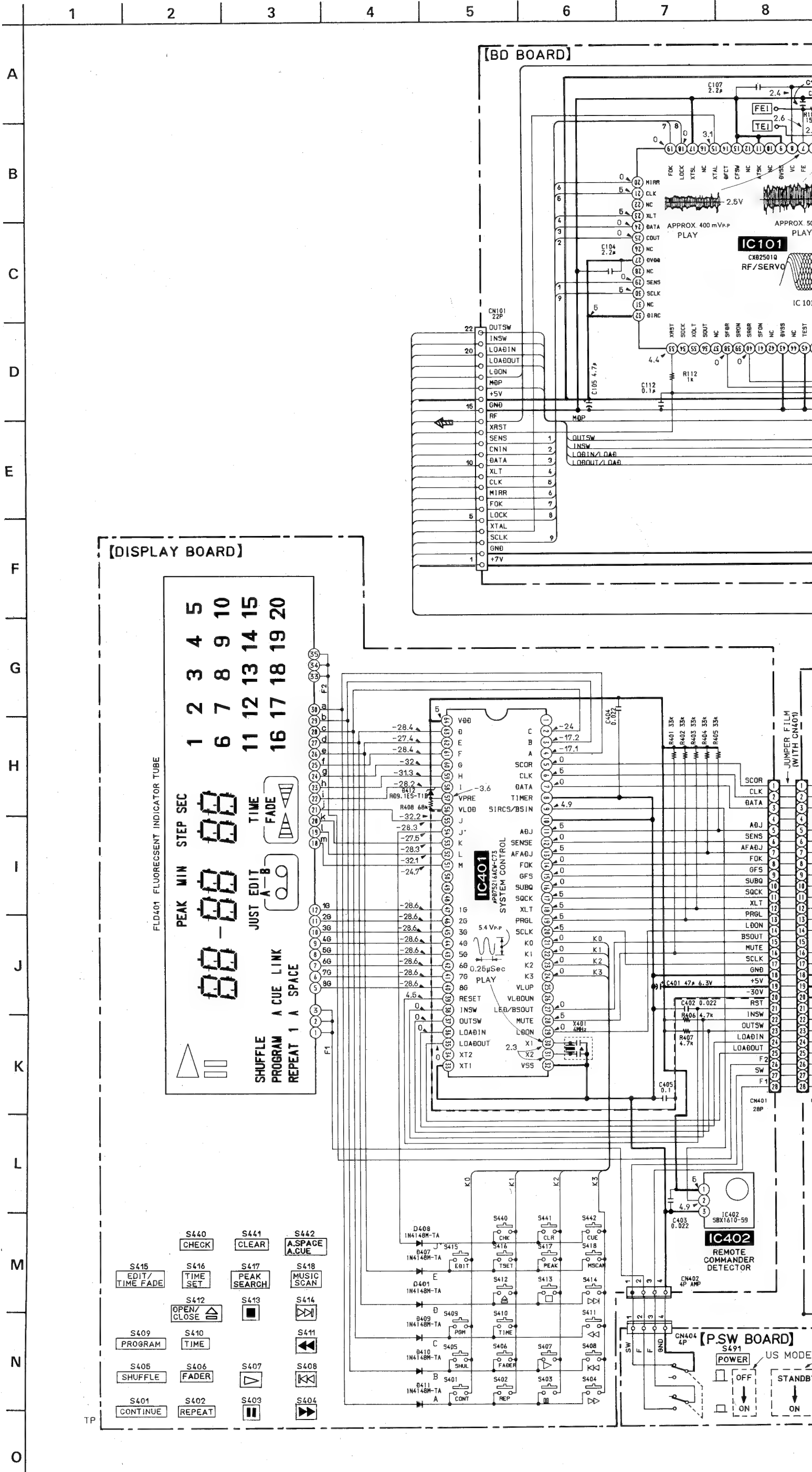
[POWER BOARD]



[POWER BOARD]



4-5. SCHEMATIC DIAGRAM



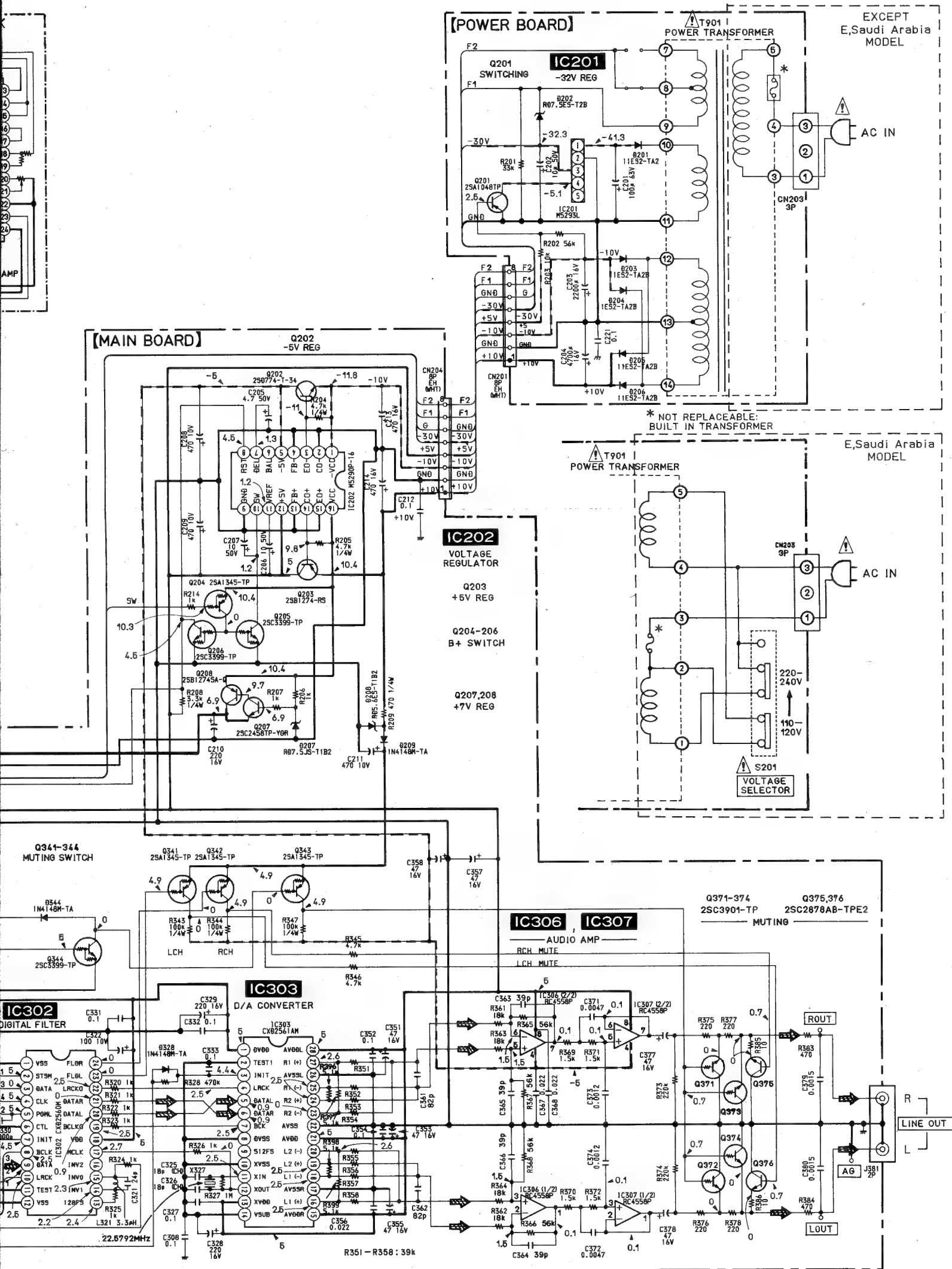
Note on Schematic Diagram :

- All capacitors are in μF unless otherwise noted. pF : μpF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : internal component.

Note :The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

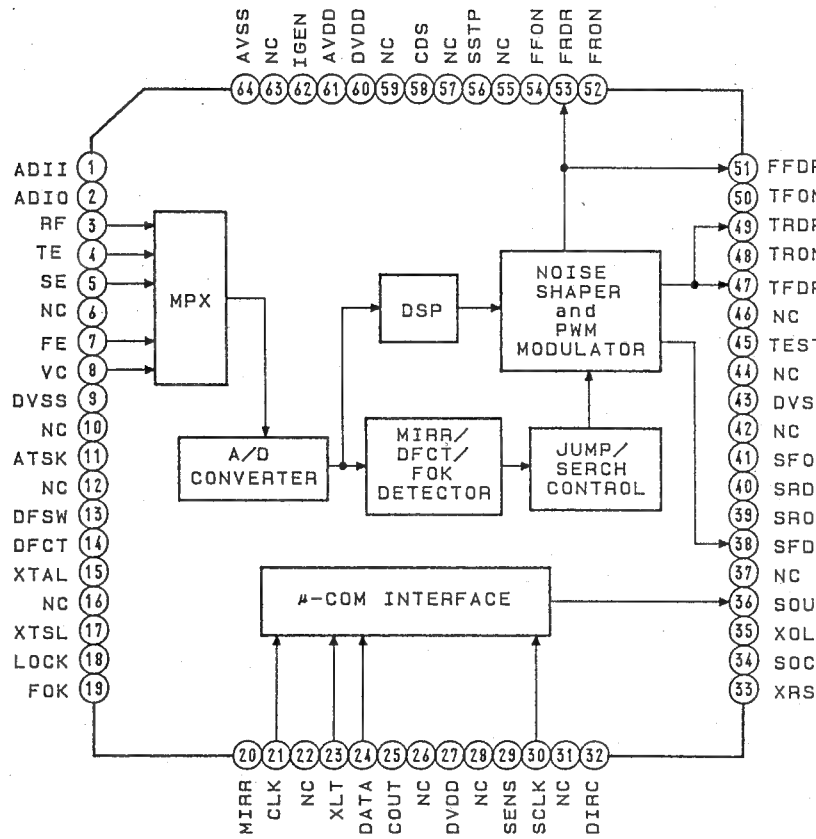
- $B+$: B + Line
- $B-$: B - Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : STOP
- Voltages are taken with a VOM (input impedance 10 M Ω).
- Waveforms are taken with a oscilloscope.
- Circled numbers refer to waveforms.
- Signal path.
- Δ : CD



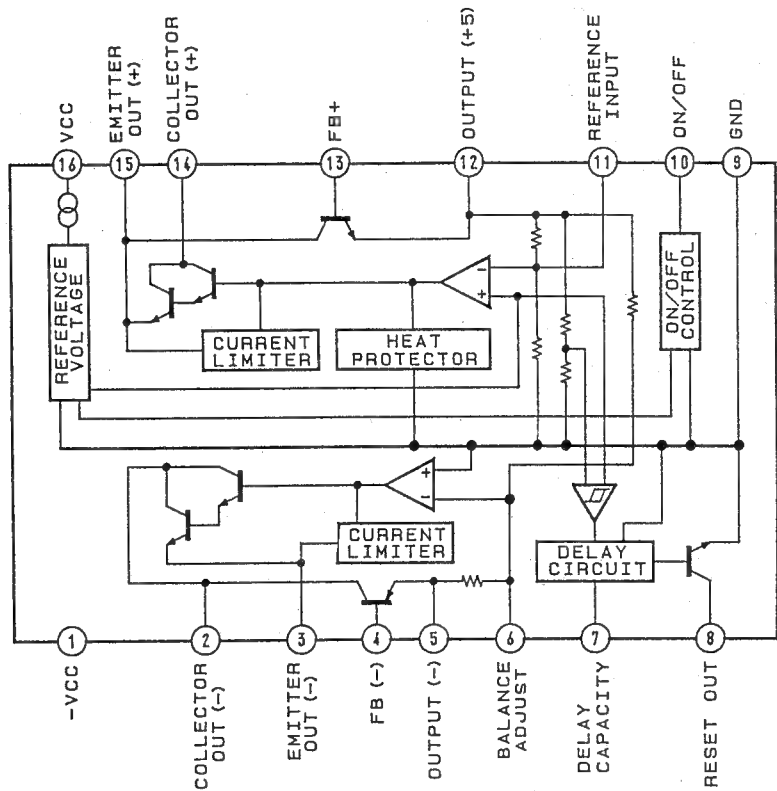


4-6. IC BLOCK DIAGRAMS

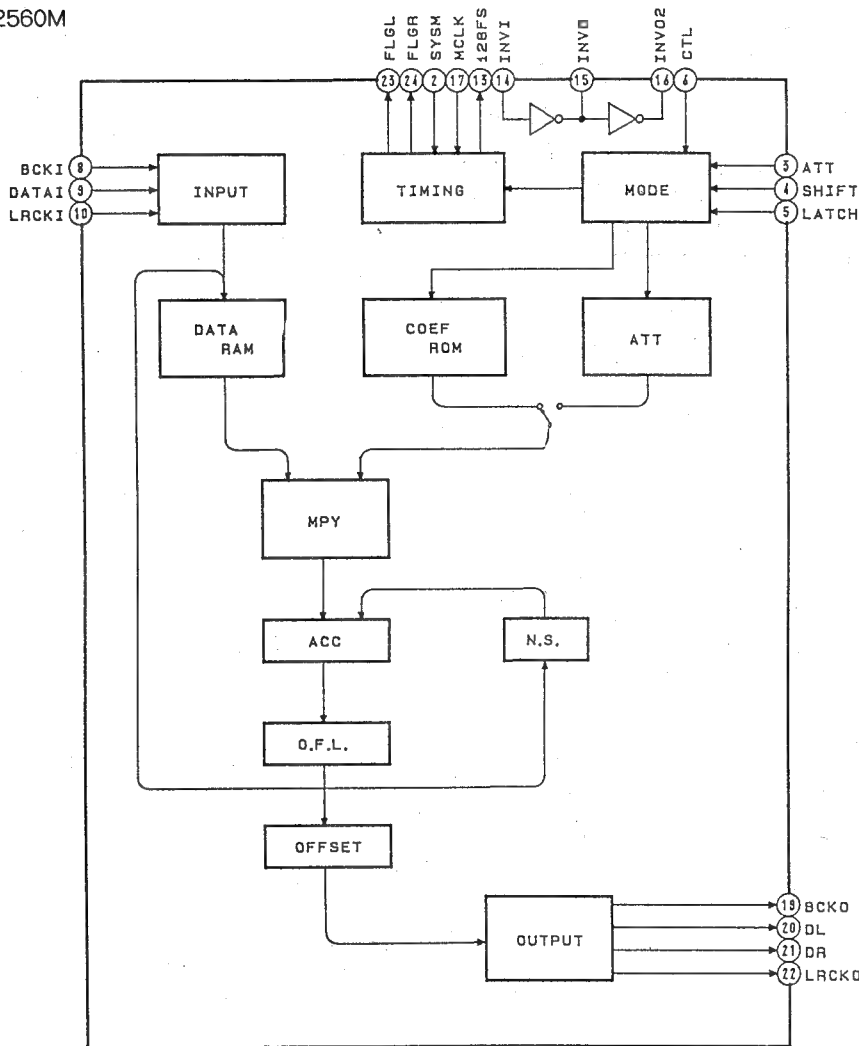
• IC101 CXD2501



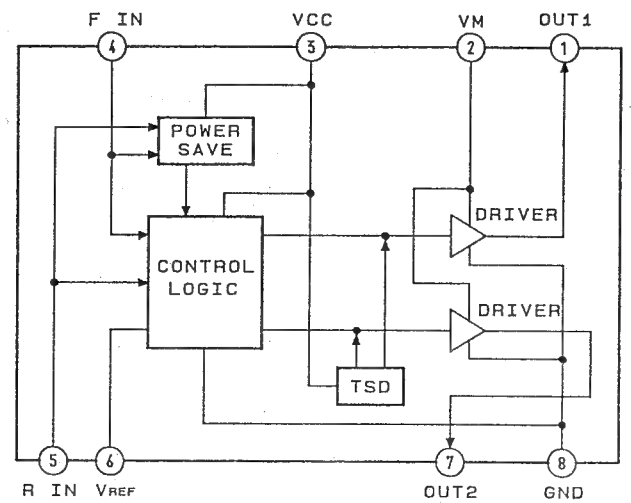
• IC202 M5290P-16



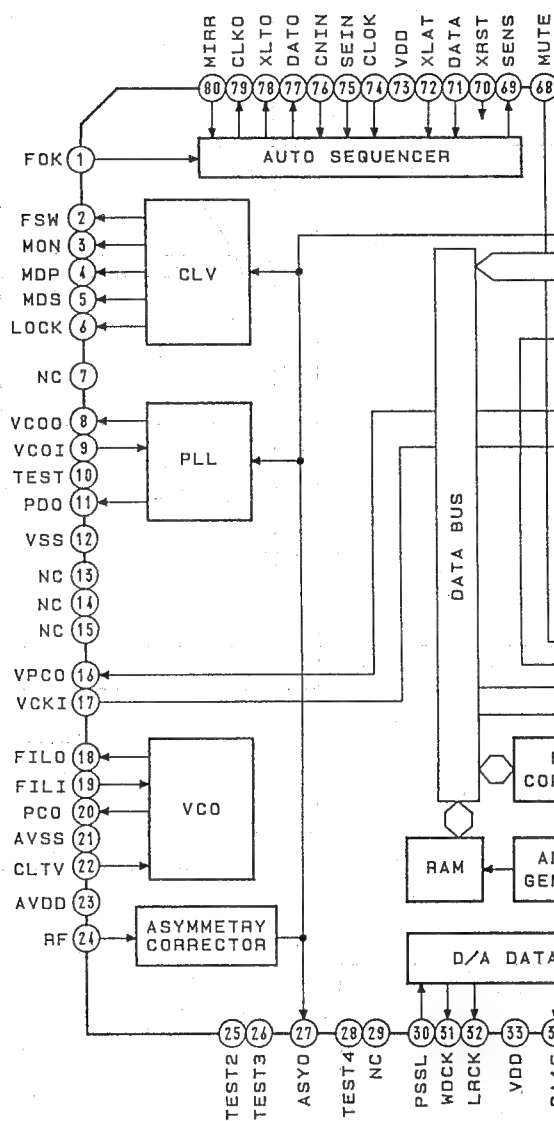
• IC302 CXD2560M



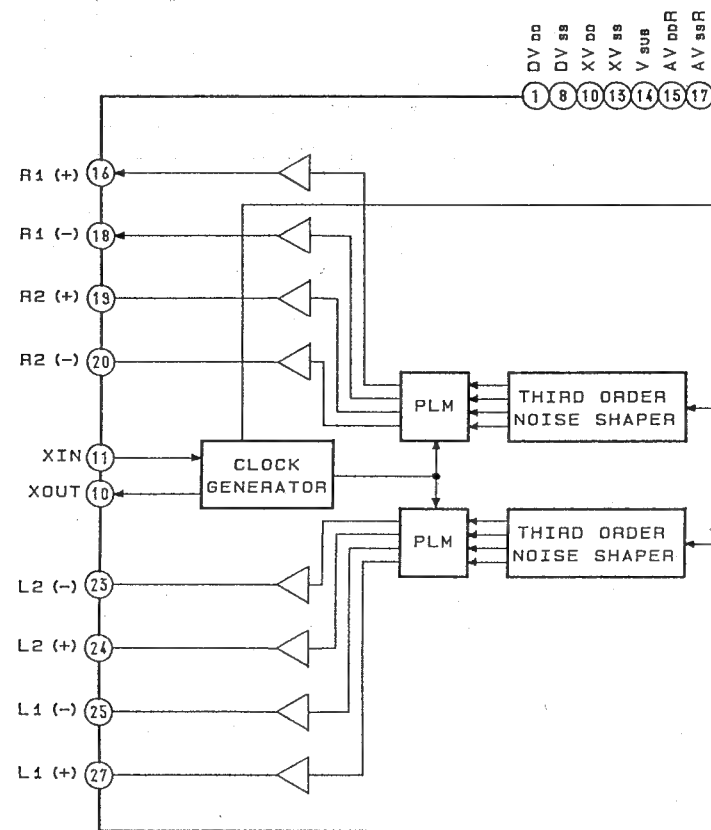
• IC103 BA6287F



• IC301 CXD2500AQ



• IC303 CXD2561AM



The block diagram illustrates the internal architecture of the TMS320C25 digital signal processor. Key components include:

- Input/Output Pins:**
 - Top: MIRR (80), CLKO (79), XLTO (78), DATO (77), CNIN (76), SEIN (75), CCLK (74), VDD (73), XLAT (72), DATA (71), XRST (70), SENS (69), MUTE (68), SCLK (67), SOSO (66), EXCK (65).
 - Bottom: TEST2 (25), TEST3 (26), ASYO (27), TEST4 (28), NC (29), PSSL (30), WCLK (31), LRCK (32), VDD (33), DA16 (34), DA15 (35), DA14 (36), DA13 (37), DA12 (38), DA11 (39), DA10 (40).
 - Right: SBS (64), SCOR (63), WFCK (62), EMPH (61), DOUT (60), MD2 (59), C16M (58), C4M (57), FSTT (56), XTST (55), XTA0 (54), XTAI (53), VSS (52), APTL (51), APTR (50), DA01 (49), DA02 (48), DA03 (47), DA04 (46), DA05 (45), DA06 (44), DA07 (43), DA08 (42), DA09 (41).
- Internal Blocks:**
 - AUTO SEQUENCER:** Receives MIRR, CLKO, XLTO, DATO, CNIN, SEIN, CCLK, VDD, XLAT, DATA, XRST, SENS, and MUTE. It controls the CLV, PLL, and VCO blocks.
 - CLV (Clock Divider):** Receives signals from the AUTO SEQUENCER and provides clock signals to the PLL and VCO.
 - PLL (Phase-Locked Loop):** Receives signals from the CLV and provides a clock signal to the VCO.
 - VCO (Voltage-Controlled Oscillator):** Receives signals from the PLL and provides a clock signal to the DATA BUS.
 - DATA BUS:** A central horizontal bus connecting the AUTO SEQUENCER, CLV, PLL, VCO, EFM DEMODULATOR, DIGITAL OUT, VARIABLE PITCH CONTROL, CLOCK GENERATOR, ERROR CORRECTOR, ADDRESS GENERATOR, RAM, and D/A DATA PROCESSOR.
 - EFM DEMODULATOR:** Receives SCLK, SOSO, and EXCK. It outputs SBS (64), SCOR (63), WFCK (62), and EMPH (61). It also provides a signal to the DIGITAL OUT block.
 - DIGITAL OUT:** Receives signals from the DATA BUS and outputs DOUT (60) and MD2 (59).
 - VARIABLE PITCH CONTROL:** Receives signals from the DATA BUS and outputs C16M (58) and C4M (57). It also provides a signal to the CLOCK GENERATOR.
 - CLOCK GENERATOR:** Receives signals from the DATA BUS and outputs FSTT (56), XTST (55), XTA0 (54), and XTAI (53). It also provides a signal to the ERROR CORRECTOR.
 - ERROR CORRECTOR:** Receives signals from the DATA BUS and outputs DA01 (49), DA02 (48), DA03 (47), DA04 (46), DA05 (45), DA06 (44), DA07 (43), DA08 (42), and DA09 (41).
 - ADDRESS GENERATOR:** Receives signals from the DATA BUS and outputs DA01 (49), DA02 (48), DA03 (47), DA04 (46), DA05 (45), DA06 (44), DA07 (43), DA08 (42), and DA09 (41).
 - RAM:** Receives signals from the DATA BUS and outputs DA01 (49), DA02 (48), DA03 (47), DA04 (46), DA05 (45), DA06 (44), DA07 (43), DA08 (42), and DA09 (41).
 - D/A DATA PROCESSOR:** Receives signals from the DATA BUS and outputs DA01 (49), DA02 (48), DA03 (47), DA04 (46), DA05 (45), DA06 (44), DA07 (43), DA08 (42), and DA09 (41).



- - XX, - X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE)...(RED)

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

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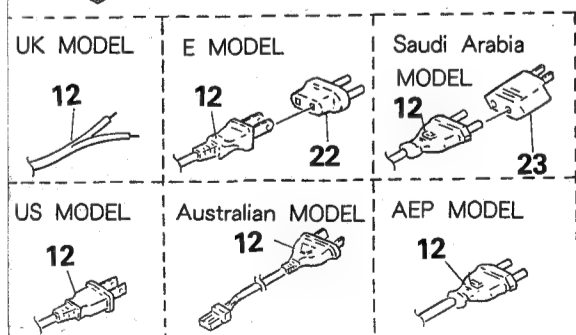
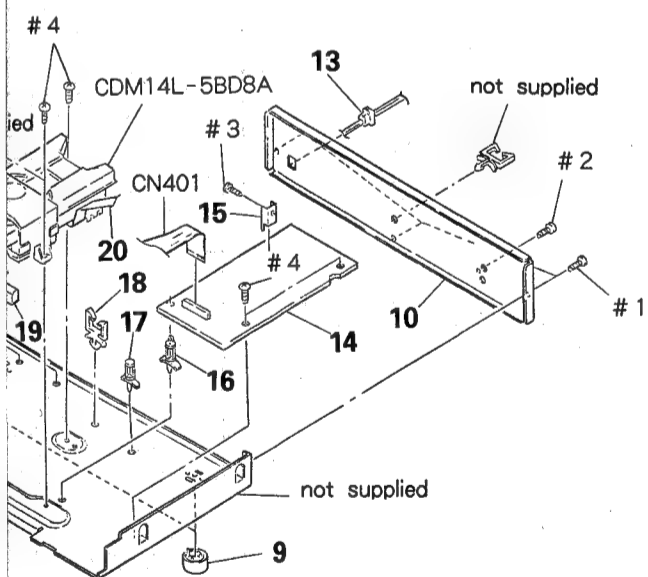
AUS
17

ION 5 ED VIEWS

"*" are not stocked
seldom required for
. Some delay should
when ordering these
parts with no reference
exploded views are
mark) list is given in
s parts list.

The components identified by mark
△ or dotted line with mark △ are
critical for safety.
Replace only with part number
specified.

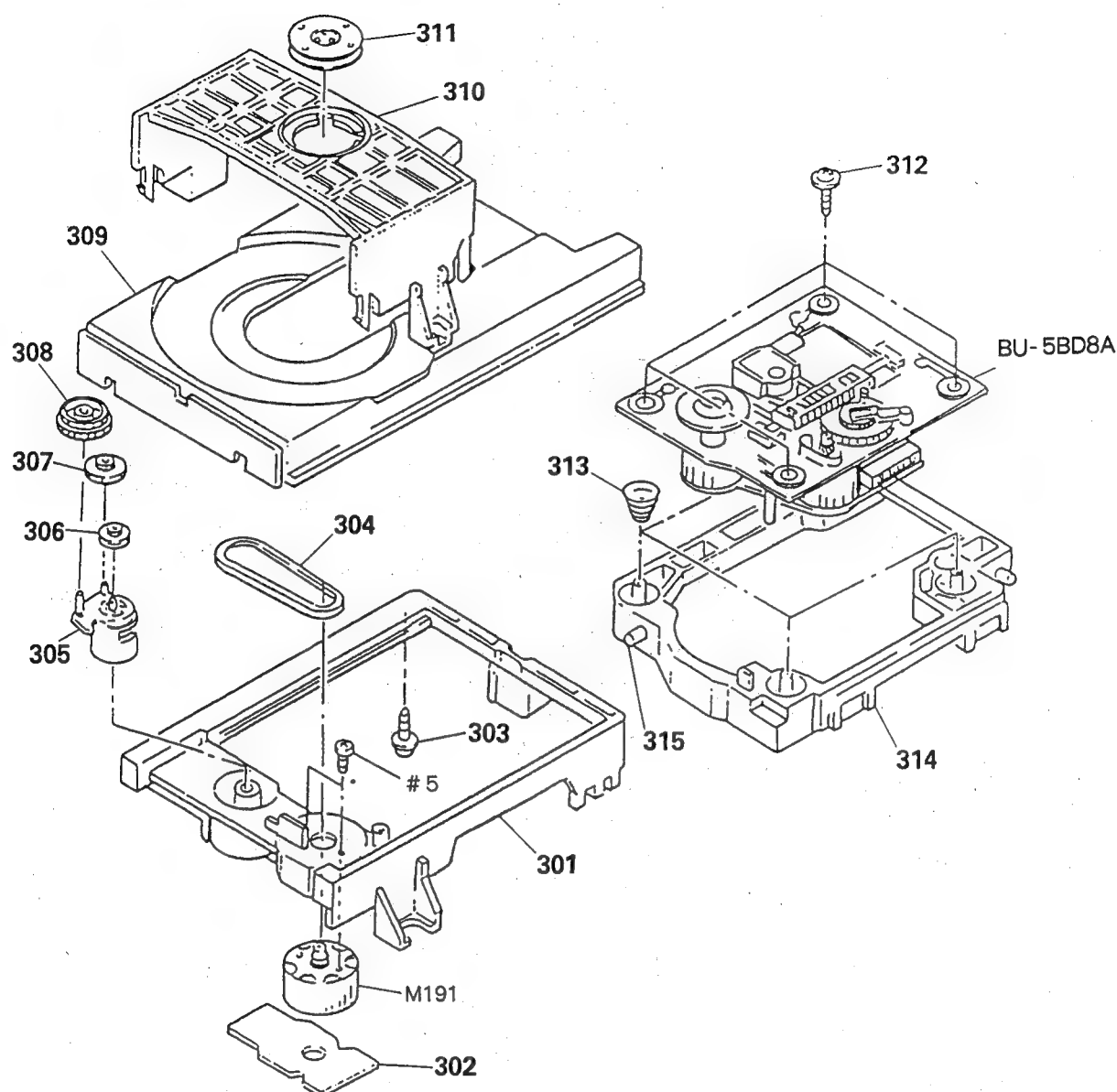
AUS : Australian
IT : Italian



Ref. No.	Part No.	Description	Remark
1	X-4942-484-1	PANEL (ALS) ASSY, FRONT (GRAY) (MADE IN FRANCE) (AEP, UK)	
1	X-4942-484-2	PANEL ASSY, FRONT (GRAY) (MADE IN JAPAN) (AEP)	
1	X-4942-485-2	PANEL ASSY, FRONT (BLACK) (MADE IN JAPAN) (IT)	
1	X-4942-486-2	PANEL ASSY, FRONT (BLACK) (MADE IN JAPAN) (US)	
1	X-4942-487-2	PANEL ASSY, FRONT (MADE IN JAPAN) (E, AUS, Saudi Arabia)	
* 2	1-642-028-21	P. SW BOARD	
3	4-927-341-01	BUTTON (POWER)	
* 4	A-4649-117-A	DISP BOARD, COMPLETE	
5	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
6	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
7	4-919-376-31	CASE (BLACK) (US, IT)	
7	4-919-376-81	CASE (GRAY) (AEP, UK, AUS, E, Saudi Arabia)	
8	3-363-099-01	SCREW (CASE +3X8 TP2) (MADE IN FRANCE) (AEP, UK)	
8	3-704-366-01	SCREW (CASE) (M3X8) (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
9	4-933-601-01	FOOT	
10	4-941-552-21	PANEL, BACK (MADE IN FRANCE) (AEP, UK)	
* 10	4-949-227-01	PANEL, BACK (MADE IN JAPAN) (AEP, IT)	
* 10	4-949-227-12	PANEL, BACK (MADE IN JAPAN) (E, Saudi Arabia)	
* 10	4-949-227-21	PANEL, BACK (MADE IN JAPAN) (AUS)	
* 10	4-949-227-33	PANEL, BACK (MADE IN JAPAN) (US)	
* 11	1-642-024-21	POWER BOARD	

Ref. No.	Part No.	Description	Remark
△12	1-574-127-31	CORD, POWER (MADE IN FRANCE) (AEP)	
△12	1-574-358-31	CORD, POWER (WITH CONNECTOR) (AUS)	
△12	1-574-390-31	CORD, POWER (UK)	
△12	1-575-651-21	CORD, POWER (MADE IN JAPAN) (AEP, IT, Saudi Arabia)	
△12	1-590-836-11	CORD, POWER (US)	
△12	1-575-653-21	CORD, POWER (E)	
* 13	3-703-571-12	BUSHING (S) (4516), CORD (E)	
* 13	3-703-244-00	BUSHING (2104), CORD (US, IT, AUS)	
13	4-946-787-01	BUSHING, CORD (MADE IN FRANCE) (AEP, UK)	
* 14	A-4649-118-A	MAIN BOARD, COMPLETE	
15	4-902-345-01	HEAT SHINK	
* 16	4-924-098-31	HOLDER, PC BOARD	
* 17	3-349-025-41	HOLDER, PC BOARD	
* 18	4-314-320-00	HOLDER, WIRE	
19	4-948-441-01	PANEL, LOADING (GRAY) (UK, AEP, E, AUS, Saudi Arabia)	
19	4-948-441-11	PANEL, LOADING (BLACK) (US, IT)	
20	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
* 21	4-921-918-11	PLATE, ORNAMENTAL (US, E, Saudi Arabia, AUS)	
22	1-569-007-11	ADAPTOR, CONVERSION (E)	
23	1-569-008-11	ADAPTOR, CONVERSION (Saudi Arabia)	
△T901	1-449-921-11	TRANSFORMER, POWER (US)	
△T901	1-449-922-11	TRANSFORMER, POWER (AEP, UK, IT, AUS)	
△T901	1-449-923-11	TRANSFORMER, POWER (E, Saudi Arabia)	
CN401	1-535-987-11	JAMPER, FILM (WITH TERMINAL)	
FLD401	1-519-681-11	INDICATOR TUBE, FLUORESCENT	

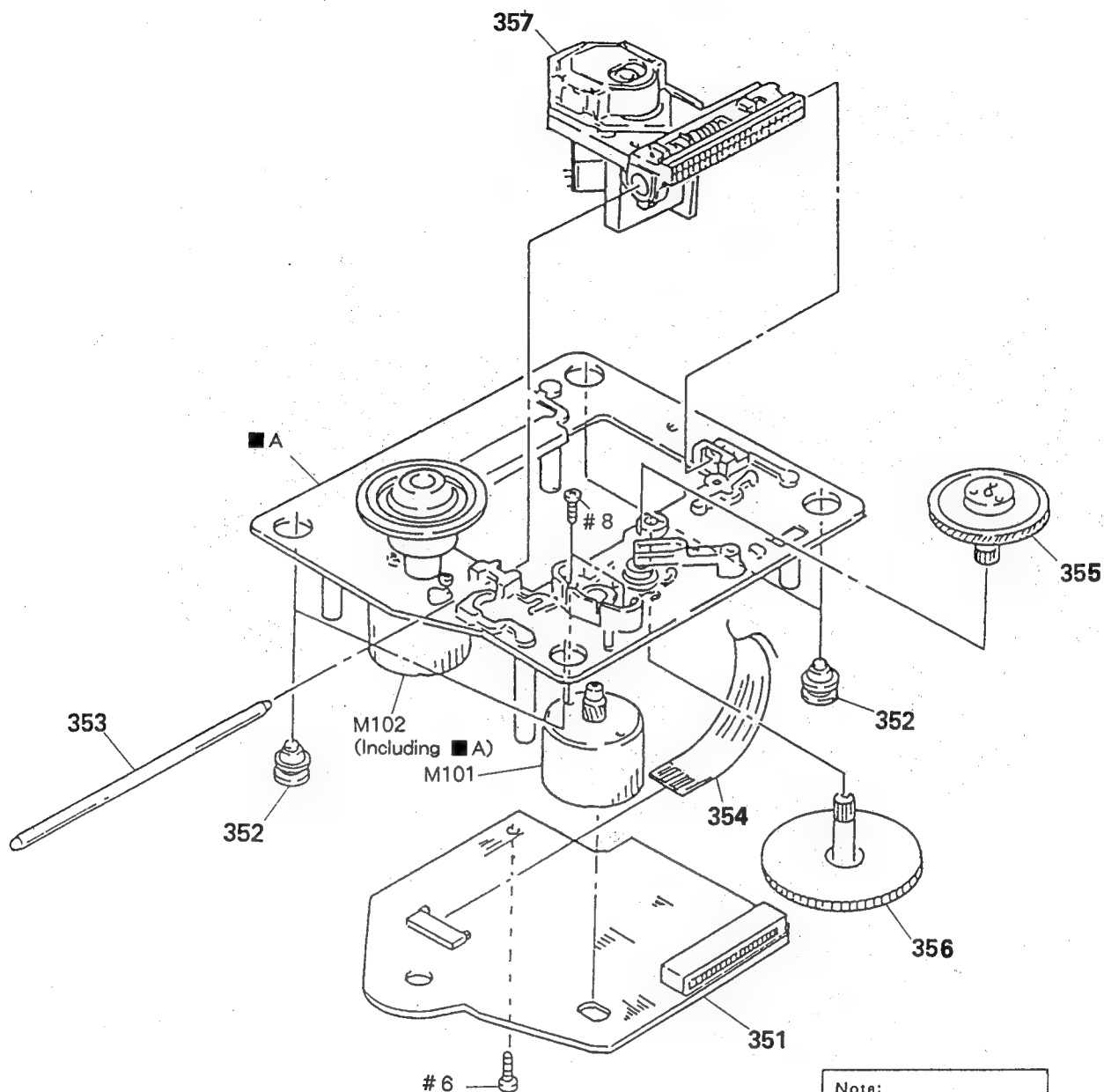
5-2. MD SECTION (CDM14L - 5BD8A)



Ref.No.	Part No.	Description	Remark
301	4-933-111-01	CHASSIS (MD)	
* 302	1-632-202-11	LOADING BOARD	
* 303	4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-948-894-01	TABLE, DISK (MADE IN FRANCE)(AEP, UK)	
309	4-949-336-01	TABLE, DISK (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	

Ref.No.	Part No.	Description	Remark
310	4-933-110-01	HOLDER (MG)	
* 311	1-452-538-11	MAGNET	
312	4-933-134-01	SCREW (+PTPWH M2. 6X6)	
313	4-917-541-01	SPRING (B) (MADE IN FRANCE) (AEP, UK)	
313	4-948-503-01	SPRING (BU), COMPRESSION (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFT (CAM)	
M191	A-4604-363-A	MOTOR (L) ASSY	

5-3. PICK-UP BLOCK SECTION (BU-5BD8A)



Ref. No.	Part No.	Description	Remark
* 351	A-4617-977-A	BD BOARD, COMPLETE	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
355	4-917-567-01	GEAR (M)	
356	4-917-564-01	GEAR (P), FLATNESS	
\triangle 357	8-848-144-11	DEVICE, OPTICAL KSS-240A	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

SECTION 6

ELECTRICAL PARTS LIST

BD**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A., uPA...: μ PA.,
uPB...: μ PB., uPC...: μ PC., uPD...: μ PD..
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4617-977-A	BD BOARD, COMPLETE				< RESISTOR >	

		< CAPACITOR >					
C101	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	R101	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C102	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R102	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C103	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	R103	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C104	1-164-505-11	CERAMIC CHIP 2.2uF	16V	R104	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C105	1-135-155-21	TANTALUM CHIP 4.7uF	10% 16V	R105	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C106	1-164-346-11	CERAMIC CHIP 1uF	16V	R112	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C107	1-164-505-11	CERAMIC CHIP 2.2uF	16V	R113	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C108	1-164-346-11	CERAMIC CHIP 1uF	16V	R114	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C112	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R117	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C151	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R118	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C152	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R121	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C153	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R122	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C154	1-164-336-11	CERAMIC CHIP 0.33uF	25V	R151	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C155	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R152	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C156	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R153	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C157	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	R154	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C158	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	R155	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C159	1-163-023-00	CERAMIC CHIP 0.015uF	5% 50V	R156	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C160	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V	R157	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C181	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R158	1-216-076-00	METAL CHIP 13K 5% 1/10W	
		< CONNECTOR >		R159	1-216-085-00	METAL CHIP 33K 5% 1/10W	
CN101	1-568-796-11	SOCKET, CONNECTOR 22P		R160	1-216-081-00	METAL CHIP 22K 5% 1/10W	
CN102	1-568-795-11	SOCKET, CONNECTOR 12P		R161	1-216-093-00	METAL CHIP 68K 5% 1/10W	
CN103	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P		R162	1-216-085-00	METAL CHIP 33K 5% 1/10W	
		< IC >		R163	1-216-308-00	METAL CHIP 4.7 5% 1/10W	
IC101	8-752-344-48	IC CXD2501Q		R181	1-216-021-00	METAL CHIP 68 5% 1/10W	
IC102	8-759-040-80	IC BA6297FP-T1		R182	1-216-021-00	METAL CHIP 68 5% 1/10W	
IC103	8-759-040-83	IC BA6287F-T1				< SWITCH >	
				S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)	

DISP

LOADING

MAIN

Ref. No.	Part No.	Description	Remark
*	A-4649-117-A	DISP BOARD, COMPLETE *****	
< CAPACITOR >			
C401	1-126-154-11	ELECT 47uF	20% 6.3V
C402	1-161-494-00	CERAMIC 0.022uF	25V
C403	1-161-494-00	CERAMIC 0.022uF	25V
C404	1-161-494-00	CERAMIC 0.022uF	25V
C405	1-164-159-11	CERAMIC 0.1uF	50V
< CONNECTOR >			
CN401	1-535-987-11	JAMPER, FILM (WITH TERMINAL)	
< DIODE >			
D401	8-719-987-63	DIODE 1N4148M	
D407	8-719-987-63	DIODE 1N4148M	
D408	8-719-987-63	DIODE 1N4148M	
D409	8-719-987-63	DIODE 1N4148M	
D410	8-719-987-63	DIODE 1N4148M	
D411	8-719-987-63	DIODE 1N4148M	
D412	8-719-121-24	DIODE RD9.1ES-L	
< FLUORESCENT INDICATOR >			
FLD401	1-519-681-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC401	8-759-061-40	IC uPD75216ACW-C73	
IC402	8-741-100-48	IC SBX1610-59	
< RESISTOR >			
R401	1-249-435-11	CARBON 33K 5%	1/4W
R402	1-249-435-11	CARBON 33K 5%	1/4W
R403	1-249-435-11	CARBON 33K 5%	1/4W
R404	1-249-435-11	CARBON 33K 5%	1/4W
R405	1-249-435-11	CARBON 33K 5%	1/4W
R406	1-249-425-11	CARBON 4.7K 5%	1/4W
R407	1-249-425-11	CARBON 4.7K 5%	1/4W
R408	1-249-439-11	CARBON 68K 5%	1/4W
< SWITCH >			
S401	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S402	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S403	1-554-303-21	SWITCH, TACTILE (■)	
S404	1-554-303-21	SWITCH, TACTILE (▶▶)	
S405	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S406	1-554-303-21	SWITCH, TACTILE (FADER)	
S407	1-554-303-21	SWITCH, TACTILE (▷)	
S408	1-554-303-21	SWITCH, TACTILE (◀◀)	

Ref. No.	Part No.	Description	Remark
S409	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S410	1-554-303-21	SWITCH, TACTILE (TIME)	
S411	1-554-303-21	SWITCH, TACTILE (◀◀)	
S412	1-554-303-21	SWITCH, TACTILE (▲ OPEN/CLOSE)	
S413	1-554-303-21	SWITCH, TACTILE (■)	
S414	1-554-303-21	SWITCH, TACTILE (▶▶)	
S415	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S416	1-554-303-21	SWITCH, TACTILE (TIME SET)	
S417	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
S418	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
S440	1-554-303-21	SWITCH, TACTILE (CHECK)	
S441	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S442	1-554-303-21	SWITCH, TACTILE (A. SPACE/A. CUE)	
< VIBRATOR >			
X401	1-577-358-21	VIBRATOR, CERAMIC	

*	1-632-202-11	LOADING BOARD	*****
< CONNECTOR >			
* CN301	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
< SWITCH >			
S271	1-572-086-11	SWITCH, LEAF (OUT SW)	
S272	1-572-086-11	SWITCH, LEAF (IN SW)	

*	A-4649-118-A	MAIN BOARD, COMPLETE	*****
4-902-345-01		HEAT SINK	
7-682-547-09		SCREW +B 3X6	
< CAPACITOR >			
C205	1-126-163-11	ELECT 4.7uF	20% 50V
C206	1-126-059-11	ELECT 10uF	20% 50V
C207	1-126-059-11	ELECT 10uF	20% 50V
C208	1-124-997-11	ELECT 470uF	20% 10V
C209	1-124-997-11	ELECT 470uF	20% 10V
C210	1-126-024-11	ELECT 220uF	20% 16V
C211	1-124-997-11	ELECT 470uF	20% 10V
C212	1-164-159-11	CERAMIC 0.1uF	50V
C213	1-126-012-11	ELECT 470uF	20% 16V
C214	1-126-012-11	ELECT 470uF	20% 16V

MAIN

Ref. No.	Part No.	Description	Remark
C301	1-126-022-11	ELECT	47uF 20% 16V
C302	1-126-301-11	ELECT	1uF 20% 50V
C305	1-126-022-11	ELECT	47uF 20% 16V
C306	1-164-159-11	CERAMIC	0.1uF 50V
C307	1-164-159-11	CERAMIC	0.1uF 50V
C308	1-164-159-11	CERAMIC	0.1uF 50V
C311	1-130-491-00	MYLAR	0.047uF 5% 50V
C312	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C313	1-161-494-00	CERAMIC	0.022uF 25V
C314	1-162-306-11	CERAMIC	0.01uF 20% 16V
C315	1-126-300-11	ELECT	0.47uF 20% 50V
C317	1-164-159-11	CERAMIC	0.1uF 50V
C319	1-162-282-31	CERAMIC	100PF 10% 50V
C320	1-130-483-00	MYLAR	0.01uF 5% 50V
C321	1-162-208-31	CERAMIC	24PF 5% 50V
C322	1-126-022-11	ELECT	47uF 20% 16V
C324	1-164-159-11	CERAMIC	0.1uF 50V
C325	1-162-205-31	CERAMIC	18PF 5% 50V
C326	1-162-205-31	CERAMIC	18PF 5% 50V
C327	1-164-159-11	CERAMIC	0.1uF 50V
C328	1-126-024-11	ELECT	220uF 20% 16V
C329	1-126-024-11	ELECT	220uF 20% 16V
C330	1-162-294-31	CERAMIC	0.001uF 10% 50V
C331	1-164-159-11	CERAMIC	0.1uF 50V
C332	1-164-159-11	CERAMIC	0.1uF 50V
C333	1-164-159-11	CERAMIC	0.1uF 50V
C335	1-164-159-11	CERAMIC	0.1uF 50V
C351	1-126-022-11	ELECT	47uF 20% 16V
C352	1-164-159-11	CERAMIC	0.1uF 50V
C353	1-126-022-11	ELECT	47uF 20% 16V
C354	1-164-159-11	CERAMIC	0.1uF 50V
C355	1-126-022-11	ELECT	47uF 20% 16V
C356	1-164-159-11	CERAMIC	0.1uF 50V
C357	1-126-022-11	ELECT	47uF 20% 16V
C358	1-126-022-11	ELECT	47uF 20% 16V
C361	1-162-280-21	CERAMIC	82PF 10% 50V
C362	1-162-280-21	CERAMIC	82PF 10% 50V
C363	1-162-213-21	CERAMIC	39PF 10% 50V
C364	1-162-213-21	CERAMIC	39PF 10% 50V
C365	1-162-213-21	CERAMIC	39PF 10% 50V
C366	1-162-213-21	CERAMIC	39PF 10% 50V
C367	1-161-494-00	CERAMIC	0.022uF 25V
C368	1-161-494-00	CERAMIC	0.022uF 25V
C371	1-106-359-00	MYLAR	4700PF 5% 200V
C372	1-106-359-00	MYLAR	4700PF 5% 200V
C373	1-130-472-00	MYLAR	0.0012uF 5% 50V
C374	1-130-472-00	MYLAR	0.0012uF 5% 50V
C377	1-126-022-11	ELECT	47uF 20% 16V

Ref. No.	Part No.	Description	Remark
C378	1-126-022-11	ELECT	47uF 20% 16V
C379	1-106-347-00	MYLAR	1500PF 5% 200V
C380	1-106-347-00	MYLAR	1500PF 5% 200V
< CONNECTOR >			
* CN204	1-564-511-11	PLUG, CONNECTOR 8P	
* CN301	1-568-843-11	SOCKET, CONNECTOR 28P	
* CN302	1-568-822-11	SOCKET, CONNECTOR 22P	
< DIODE >			
D207	8-719-114-49	DIODE RD7. 5JSB2	
D208	8-719-109-89	DIODE RD5. 6ESB2	
D209	8-719-987-63	DIODE 1N4148M	
D328	8-719-987-63	DIODE 1N4148M	
D344	8-719-987-63	DIODE 1N4148M	
< IC >			
IC202	8-759-630-21	IC M5290P-16	
IC301	8-752-337-26	IC CXD2500AQ	
IC302	8-752-342-65	IC CXD2560M	
IC303	8-752-349-01	IC CXD2561AM	
IC306	8-759-945-58	IC RC4558P	
IC307	8-759-945-58	IC RC4558P	
< JACK >			
J381	1-569-442-11	JACK, PIN 2P	
< COIL >			
L301	1-408-403-00	INDUCTOR 3.3uH	
L321	1-408-403-00	INDUCTOR 3.3uH	
< TRANSISTOR >			
Q202	8-729-140-96	TRANSISTOR 2SD774-34	
Q203	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q204	8-729-900-65	TRANSISTOR DTA144ES	
Q205	8-729-900-89	TRANSISTOR DTC144ES	
Q206	8-729-900-89	TRANSISTOR DTC144ES	
Q207	8-729-230-45	TRANSISTOR 2SC2458-YGR	
Q208	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q341	8-729-900-65	TRANSISTOR DTA144ES	
Q342	8-729-900-65	TRANSISTOR DTA144ES	
Q343	8-729-900-65	TRANSISTOR DTA144ES	
Q344	8-729-900-89	TRANSISTOR DTC144ES	
Q371	8-729-900-74	TRANSISTOR DTC143TS	
Q372	8-729-900-74	TRANSISTOR DTC143TS	
Q373	8-729-900-74	TRANSISTOR DTC143TS	
Q374	8-729-900-74	TRANSISTOR DTC143TS	
Q375	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q376	8-729-231-55	TRANSISTOR 2SC2878-AB	

MAIN

POWER

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R204	1-249-425-11	CARBON	4.7K	5%	1/4W
R205	1-249-425-11	CARBON	4.7K	5%	1/4W
R206	1-249-417-11	CARBON	1K	5%	1/4W
R207	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-423-11	CARBON	3.3K	5%	1/4W
R209	1-249-413-11	CARBON	470	5%	1/4W
R214	1-249-417-11	CARBON	1K	5%	1/4W
R301	1-249-417-11	CARBON	1K	5%	1/4W
R302	1-249-417-11	CARBON	1K	5%	1/4W
R303	1-249-421-11	CARBON	2.2K	5%	1/4W
R304	1-249-417-11	CARBON	1K	5%	1/4W
R306	1-249-413-11	CARBON	470	5%	1/4W
R309	1-249-405-11	CARBON	100	5%	1/4W
R311	1-249-423-11	CARBON	3.3K	5%	1/4W
R312	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-423-11	CARBON	3.3K	5%	1/4W
R314	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-249-417-11	CARBON	1K	5%	1/4W
R316	1-249-417-11	CARBON	1K	5%	1/4W
R317	1-249-419-11	CARBON	1.5K	5%	1/4W
R318	1-249-441-11	CARBON	100K	5%	1/4W
R319	1-247-903-00	CARBON	1M	5%	1/4W
R320	1-249-417-11	CARBON	1K	5%	1/4W
R321	1-249-417-11	CARBON	1K	5%	1/4W
R322	1-249-417-11	CARBON	1K	5%	1/4W
R323	1-249-417-11	CARBON	1K	5%	1/4W
R324	1-249-417-11	CARBON	1K	5%	1/4W
R325	1-249-417-11	CARBON	1K	5%	1/4W
R326	1-249-417-11	CARBON	1K	5%	1/4W
R327	1-247-903-00	CARBON	1M	5%	1/4W
R328	1-247-895-00	CARBON	470K	5%	1/4W
R343	1-249-441-11	CARBON	100K	5%	1/4W
R344	1-249-441-11	CARBON	100K	5%	1/4W
R345	1-249-425-11	CARBON	4.7K	5%	1/4W
R346	1-249-425-11	CARBON	4.7K	5%	1/4W
R347	1-249-441-11	CARBON	100K	5%	1/4W
R351	1-249-436-11	CARBON	39K	5%	1/4W
R352	1-249-436-11	CARBON	39K	5%	1/4W
R353	1-249-436-11	CARBON	39K	5%	1/4W
R354	1-249-436-11	CARBON	39K	5%	1/4W
R355	1-249-436-11	CARBON	39K	5%	1/4W
R356	1-249-436-11	CARBON	39K	5%	1/4W
R357	1-249-436-11	CARBON	39K	5%	1/4W
R358	1-249-436-11	CARBON	39K	5%	1/4W
R361	1-249-432-11	CARBON	18K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R362	1-249-432-11	CARBON	18K	5%	1/4W
R363	1-249-432-11	CARBON	18K	5%	1/4W
R364	1-249-432-11	CARBON	18K	5%	1/4W
R365	1-247-438-11	CARBON	56K	5%	1/4W
R366	1-247-438-11	CARBON	56K	5%	1/4W
R367	1-247-438-11	CARBON	56K	5%	1/4W
R368	1-247-438-11	CARBON	56K	5%	1/4W
R369	1-249-419-11	CARBON	1.5K	5%	1/4W
R370	1-249-419-11	CARBON	1.5K	5%	1/4W
R371	1-249-419-11	CARBON	1.5K	5%	1/4W
R372	1-249-419-11	CARBON	1.5K	5%	1/4W
R373	1-247-887-00	CARBON	220K	5%	1/4W
R374	1-247-887-00	CARBON	220K	5%	1/4W
R375	1-249-409-11	CARBON	220	5%	1/4W
R376	1-249-409-11	CARBON	220	5%	1/4W
R377	1-249-409-11	CARBON	220	5%	1/4W
R378	1-249-409-11	CARBON	220	5%	1/4W
R383	1-249-413-11	CARBON	470	5%	1/4W
R384	1-249-413-11	CARBON	470	5%	1/4W
R385	1-249-393-11	CARBON	10	5%	1/4W
R386	1-249-393-11	CARBON	10	5%	1/4W
R396	1-247-848-11	CARBON	5.1K	5%	1/4W
R397	1-247-848-11	CARBON	5.1K	5%	1/4W
R398	1-247-848-11	CARBON	5.1K	5%	1/4W
R399	1-247-848-11	CARBON	5.1K	5%	1/4W

< VIBRATOR >

X327 1-579-314-11 VIBRATOR, CRYSTAL

* 1-642-024-21 POWER BOARD

< CAPACITOR >

C201	1-124-572-11	ELECT	100uF	20%	63V
C202	1-126-059-11	ELECT	10uF	20%	50V
C203	1-124-556-11	ELECT	2200uF	20%	16V
C204	1-126-937-11	ELECT	4700uF	20%	16V
C221	1-164-159-11	CERAMIC	0.1uF		50V

< CONNECTOR >

* CN201 1-564-511-11 PLUG, CONNECTOR 8P
 * CN203 1-580-230-11 PIN, CONNECTOR (PC BOARD) 3P

< DIODE >

D201	8-719-200-82	DIODE	11ES2
D202	8-719-110-03	DIODE	RD7.5ES-B2
D203	8-719-200-82	DIODE	11ES2

POWER**P.SW**

Ref. No.	Part No.	Description	Remark
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D204	8-719-200-82	DIODE 11ES2	
D205	8-719-200-82	DIODE 11ES2	
D206	8-719-200-82	DIODE 11ES2	

< IC >

IC201	8-759-633-42	IC M5293L	
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< TRANSISTOR >

Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
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< RESISTOR >

R201	1-249-435-11	CARBON 33K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	

*	1-642-028-21	P. SW BOARD	
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< SWITCH >

AS201	1-571-722-11	SWITCH, VOLTAGE SELECTION (E, Saudi Arabia)	
S491	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	

MISCELLANEOUS

△12	1-574-127-31	CORD, POWER (MADE IN FRANCE) (AEP)	
△12	1-574-358-31	CORD, POWER (WITH CONNECTOR) (AUS)	
△12	1-574-390-31	CORD, POWER (UK)	
△12	1-575-651-21	CORD, POWER (MADE IN JAPAN) (AEP, IT, Saudi Arabia)	
△12	1-575-653-21	CORD, POWER (E)	
△12	1-590-836-11	CORD, POWER (US).	

20	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
22	1-569-007-11	ADAPTOR, CONVERSION (E)	
23	1-569-008-11	ADAPTOR, CONVERSION (Saudi Arabia)	
* 311	1-452-538-11	MAGNET	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
△357	8-848-144-11	DEVICE, OPTICAL KSS-240A	

M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M191	A-4604-363-A	MOTOR (L) ASSY	

△T901	1-449-921-11	TRANSFORMER, POWER (US)	
△T901	1-449-922-11	TRANSFORMER, POWER (AEP, UK, IT, AUS)	
△T901	1-449-923-11	TRANSFORMER, POWER (E, Saudi Arabia)	

Ref. No.	Part No.	Description	Remark
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ACCESSORIES & PACKING MATERIALS

	1-558-271-11	CORD, CONNECTION (MADE IN FRANCE)	
	1-559-533-11	CORD, CONNECTION (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
	3-754-846-11	MANUAL, INSTRUCTION (English, French, Spanish, Portuguese)	
*	4-922-998-01	CUSHION (MADE IN JAPAN) (US, AEP, E, IT, AUS, Saudi Arabia)	
*	4-941-548-01	LABEL, CLASS 1 (AEP, UK, IT, AUS)	
*	4-948-882-01	INDIVIDUAL CARTON	
*	4-949-399-01	CUSHION (MADE IN FRANCE) (AEP, UK)	

HARDWARE LIST

#1	7-682-548-09	SCREW +BVT 3X8 (S)	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#3	7-682-547-09	SCREW +B 3X6	
#4	7-682-547-04	SCREW +BVT 3X6 (S)	
#5	7-621-775-10	SCREW +B 2.6X4	
#6	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#7	7-621-255-15	SCREW +P 2X3	

AUS : Australian

IT : Italian

The components identified by
mark △ or dotted line with mark
△ are critical for safety.
Replace only with part number
specified.

CDP-C322M

SERVICE MANUAL

*US Model
AEP Model
UK Model
E Model
Australian Model*



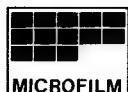
Model Name Using Similar Mechanism	CDP-C325M/C422M
Optical Pick-up Block Type	BU-5BD8B

SPECIFICATIONS

System	Compact disc digital audio system	General	
Laser	Semiconductor laser ($\lambda=780\text{ nm}$)	Power requirements	US model: 120V AC, 60Hz UK, Australian model: 240V AC, 50/60Hz AEP model: 220—230V AC, 50/60Hz E model: 110—120 or 220—240V AC adjustable, 50/60Hz
Laser output	Emission duration: continuous Max. 44.6 μW * * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.	Power consumption	12 W
Frequency response	2 Hz — 20 kHz ($\pm 0.5\text{ dB}$)	Dimensions	Approx. 355 \times 120 \times 385 mm (w/h/d) (14 \times 4 $\frac{3}{4}$ \times 15 $\frac{1}{4}$ inches) including projecting parts and controls
Signal to noise ratio	More than 100 dB	Weight	Approx. 5.0 kg (11 lbs 1 oz), net
Dynamic range	More than 98 dB	Supplied accessories	
Harmonic distortion	Less than 0.005% (1 kHz)	Audio signal connecting cord	(phono plug \times 2 \leftrightarrow phono plug \times 2) (1)
Channel separation	More than 100 dB (1 kHz)	Operating Manual	(1)
Wow and flutter	Below measurable limit		
Outputs	LINE OUT (phono jacks) Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms		

Design and specifications are subject to change without notice.

COMPACT DISC PLAYER
SONY[®]



For the United Kingdom and European Countries.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.



During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

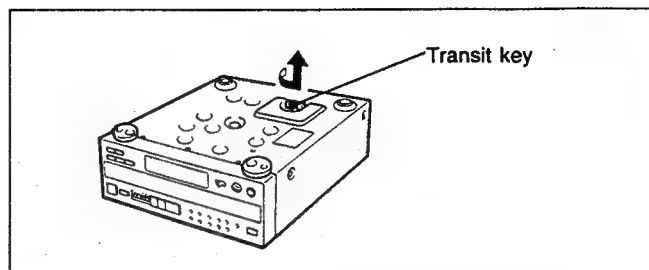
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Note on the Transit Key

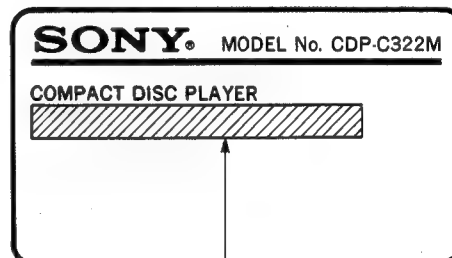


The transit key on the bottom exterior of the unit protects the optical system against shock during transportation. Before operating the CD player, be sure to remove the key by following the instructions on the label, and store it in a safe place.

When transporting the unit, replace the key in its original hole and lock it in place.

MODEL IDENTIFICATION

— Specification Label —



US model: AC: 120V 60Hz 12W

AEP model: AC: 220-230V~50/60Hz

UK, AUS model: AC: 240V~50/60Hz

E model: AC: 110-120, 220-240V~50/60Hz 12W

• AUS: Australian model

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

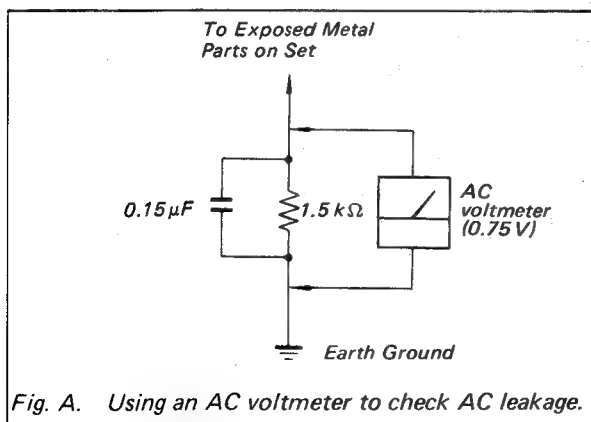


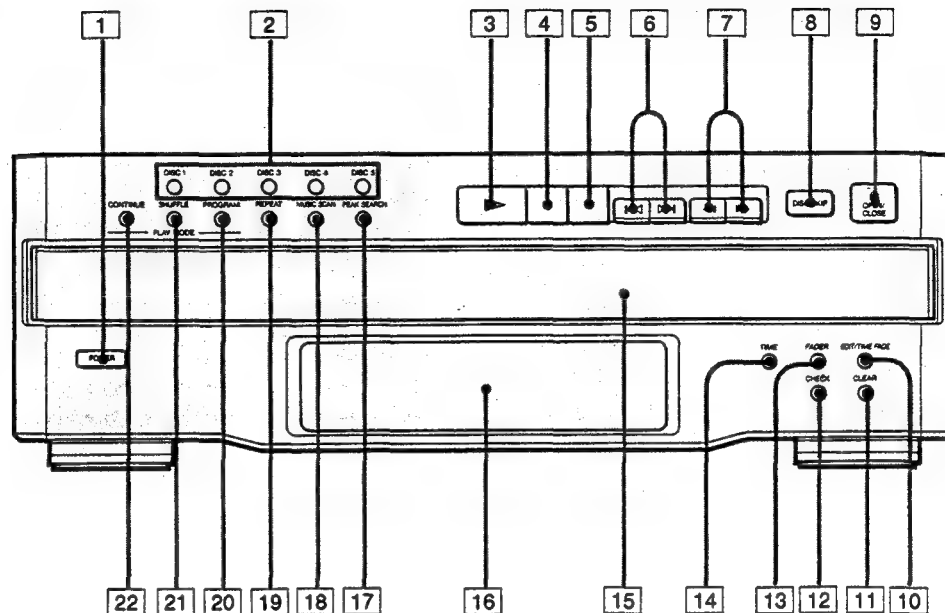
Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1 GENERAL

This section is extracted from instruction manual.

1-1. LOCATION AND CONTROLS

Front Panel



Refer to the pages indicated in () for details.

- | | |
|---|---|
| 1 POWER switch (page 8) | 12 CHECK (program check) button (page 13) |
| 2 DISC 1-5 buttons (page 8) | 13 FADER button (page 17) |
| 3 ► (play) button (page 8) | 14 TIME button (page 9) |
| 4 (pause) button (page 8) | 15 Disc tray (page 8) |
| 5 ■ (stop) button (page 8) | 16 Display window |
| 6 ◀◀/▶▶ (AMS*) buttons (page 10) | 17 PEAK SEARCH button (page 18) |
| 7 ◀◀/▶▶ (manual search) buttons (page 10) | 18 MUSIC SCAN button (page 16) |
| 8 DISC SKIP button (page 8) | 19 REPEAT button (page 16) |
| 9 ≡ OPEN/CLOSE button (page 8) | 20 PROGRAM button (page 12) |
| 10 EDIT/TIME FADE button (page 14) | 21 SHUFFLE button (page 11) |
| 11 CLEAR (program clear) button (page 13) | 22 CONTINUE button (page 8) |

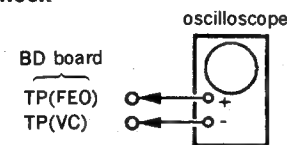
* AMS is the abbreviation of Automatic Music Sensor.

SECTION 2 ELECTRICAL BLOCK CHECKING

Note :

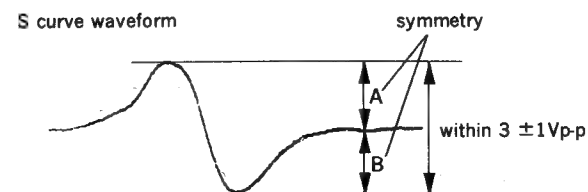
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1V_{p-p}$.

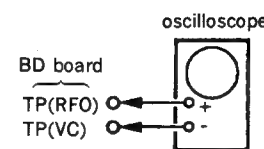


5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

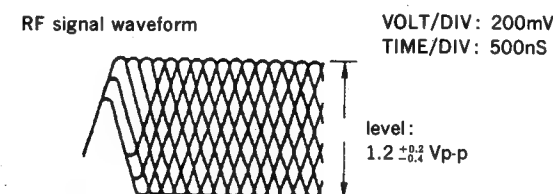


Procedure :

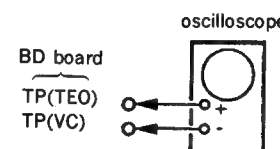
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

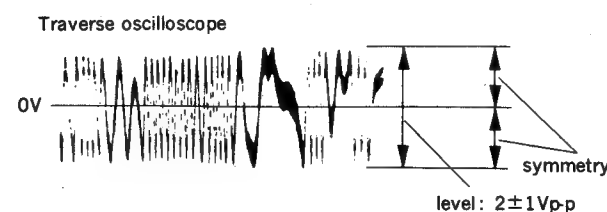


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

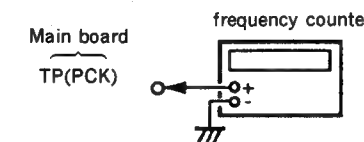


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.

There is no problem.

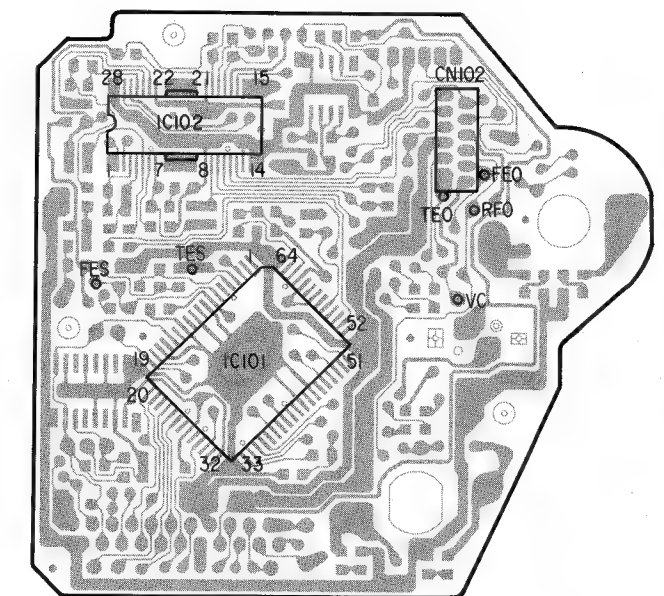
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Locations :

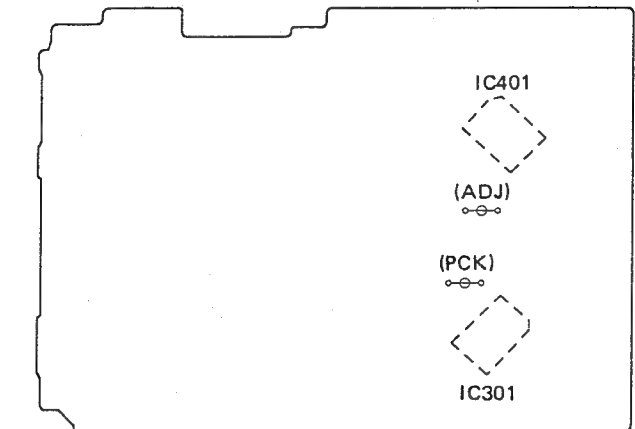
[BD Board]

—Conductor Side—



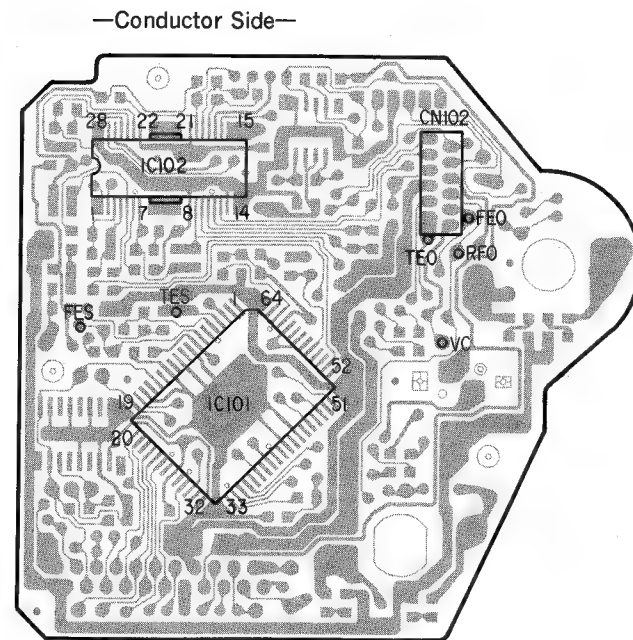
[MAIN Board]

—Component Side—

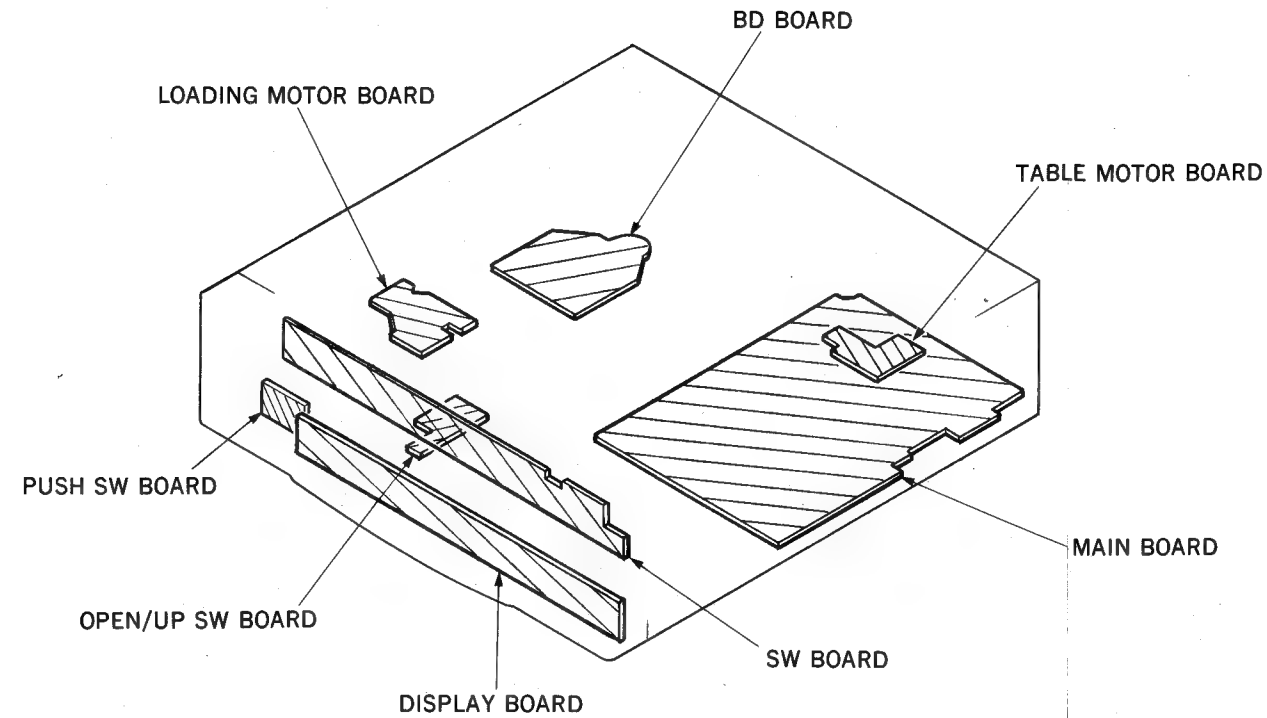


SECTION 3 DIAGRAMS

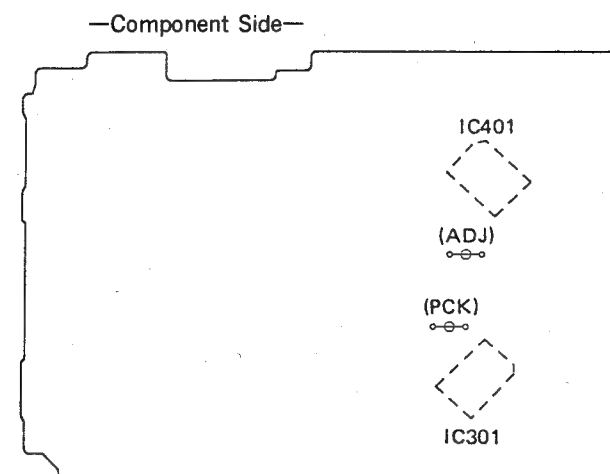
Adjustment Locations :
[BD Board]



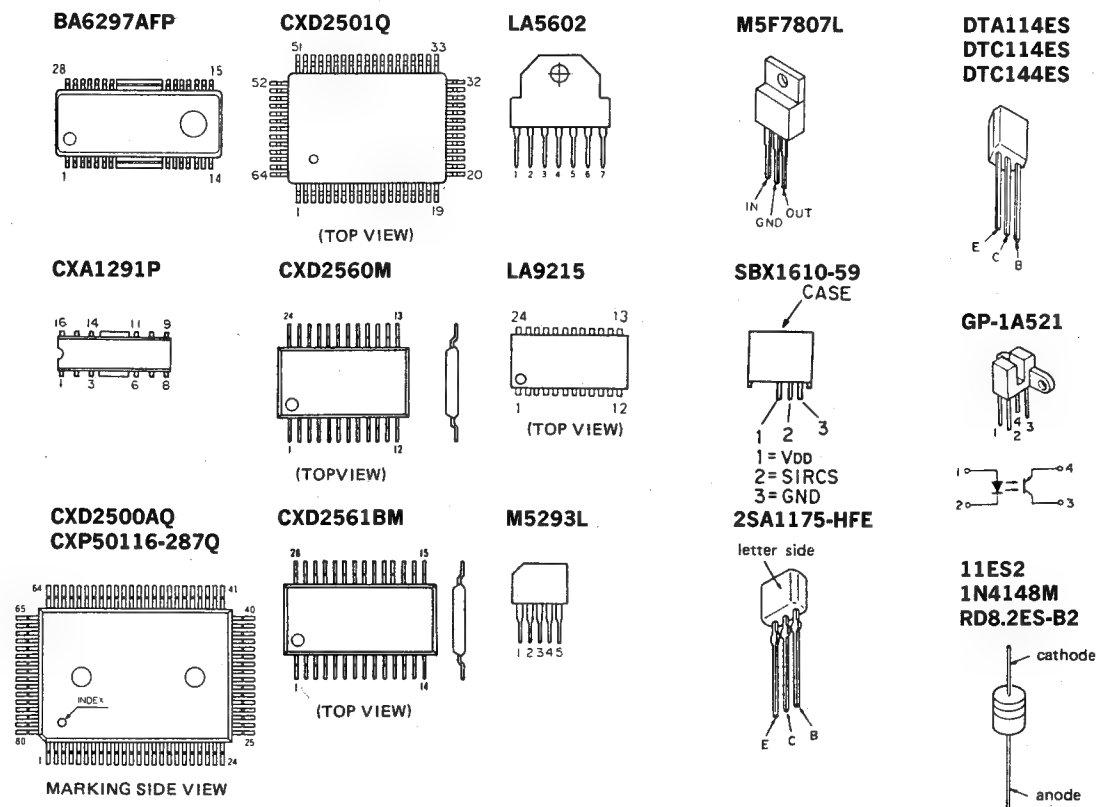
3-1. CIRCUIT BOARDS LOCATION



[MAIN Board]

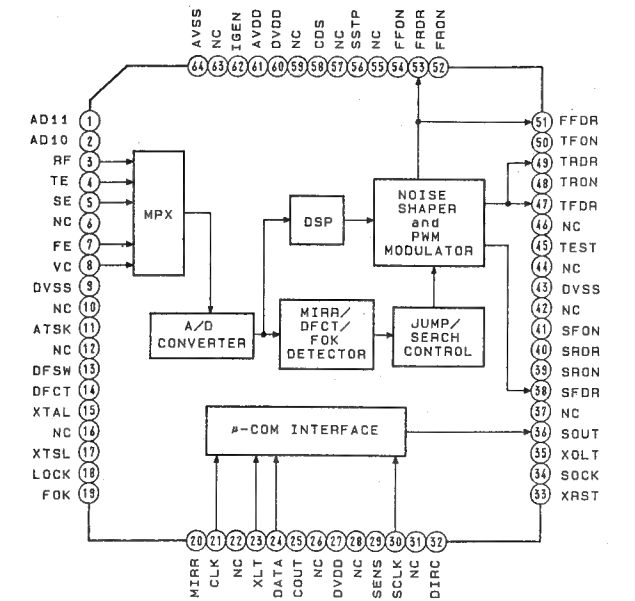


3-2. SEMICONDUCTOR LEAD LAYOUTS

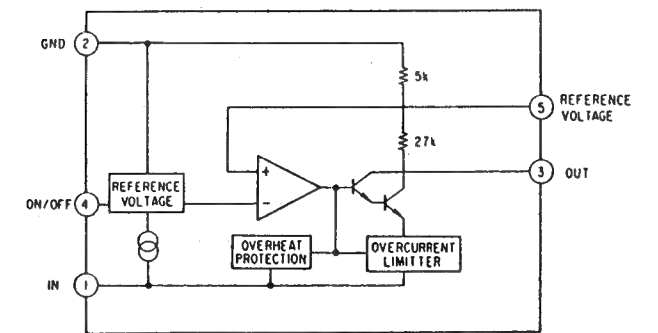


• IC Block Diagrams

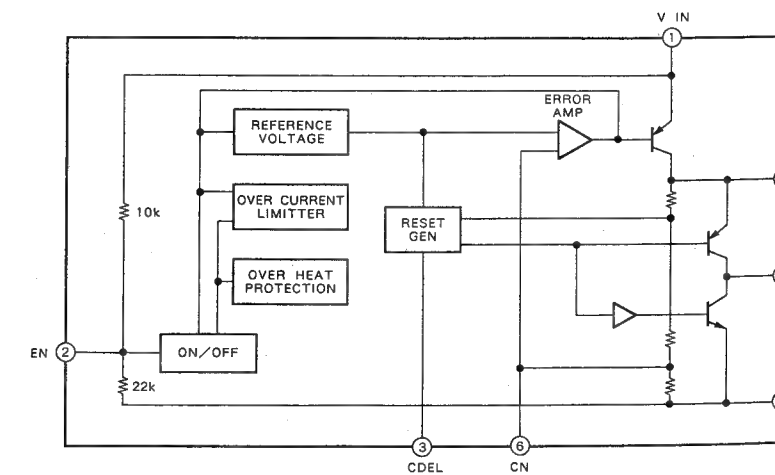
IC101 CXD2501Q



IC201 M5293L

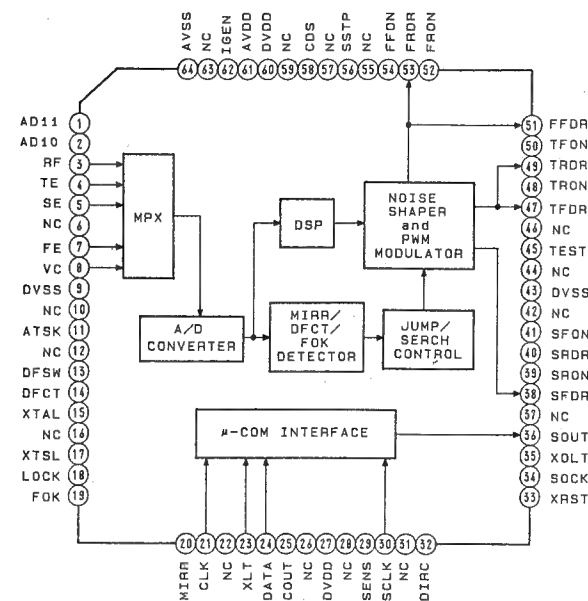


IC202 LA5602

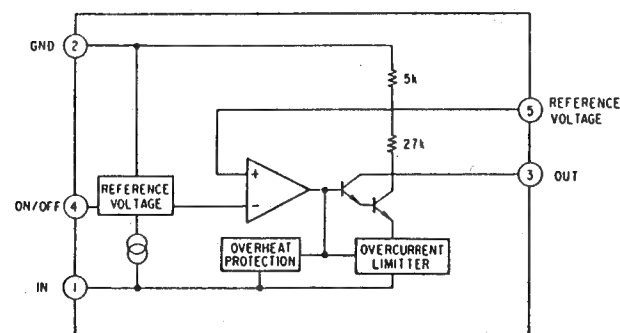


• IC Block Diagrams

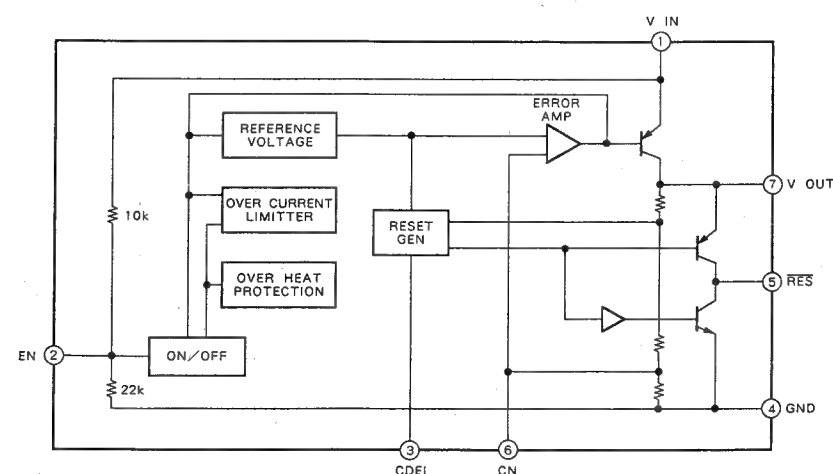
IC101 CXD2501Q



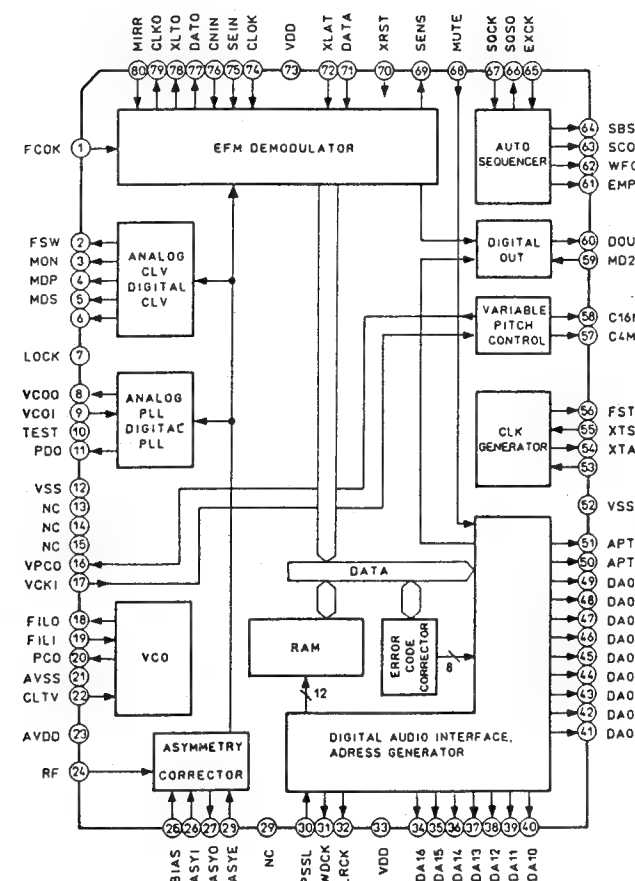
IC201 M5293L



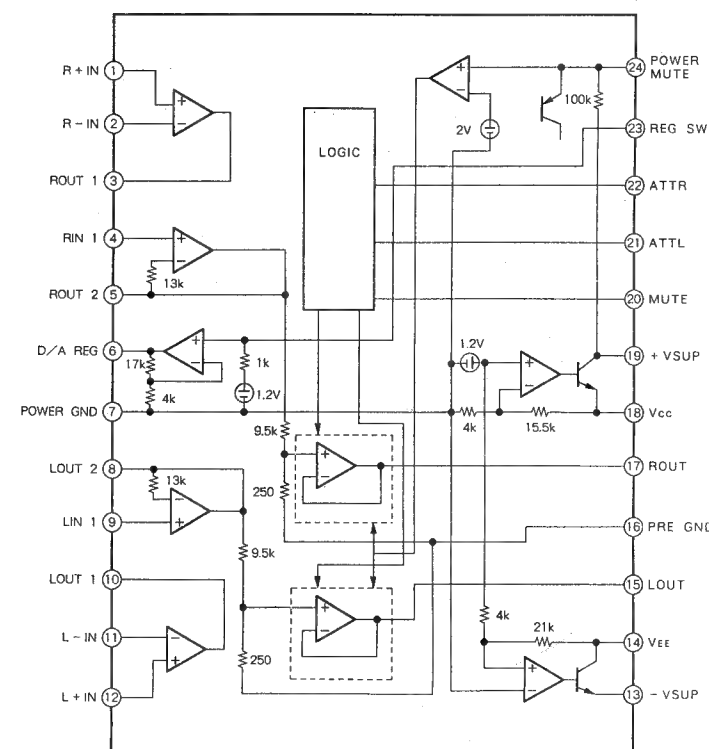
IC202 LA5602



IC301 CXD2500AQ



IC306 LA9215



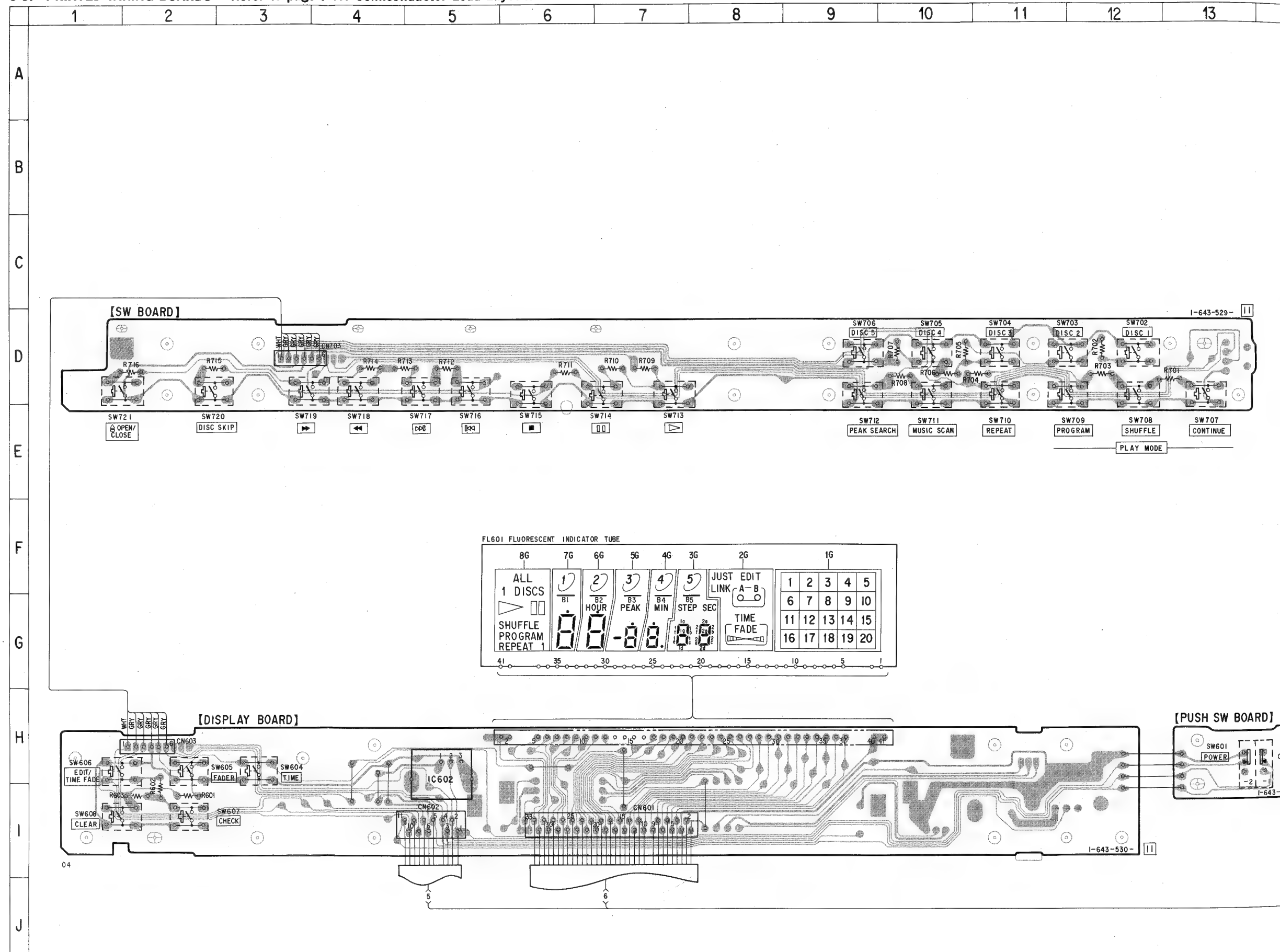
● Semiconductor Location

Ref. No.	Location
D201	D-23
D202	E-23
D203	C-23
D204	C-23
D205	D-23
D206	C-23
D207	C-20
D208	F-21
D385	I-23
D701	G-30
IC101	C-28
IC102	B-28
IC201	D-23
IC202	D-22
IC204	D-22
IC301	H-18
IC302	I-20
IC303	H-21
IC306	H-24
IC401	D-18
IC402	C-19
IC602	H-5
Q201	E-22
Q302	F-23
Q303	G-22
Q304	G-23
Q305	G-23
Q401	C-17

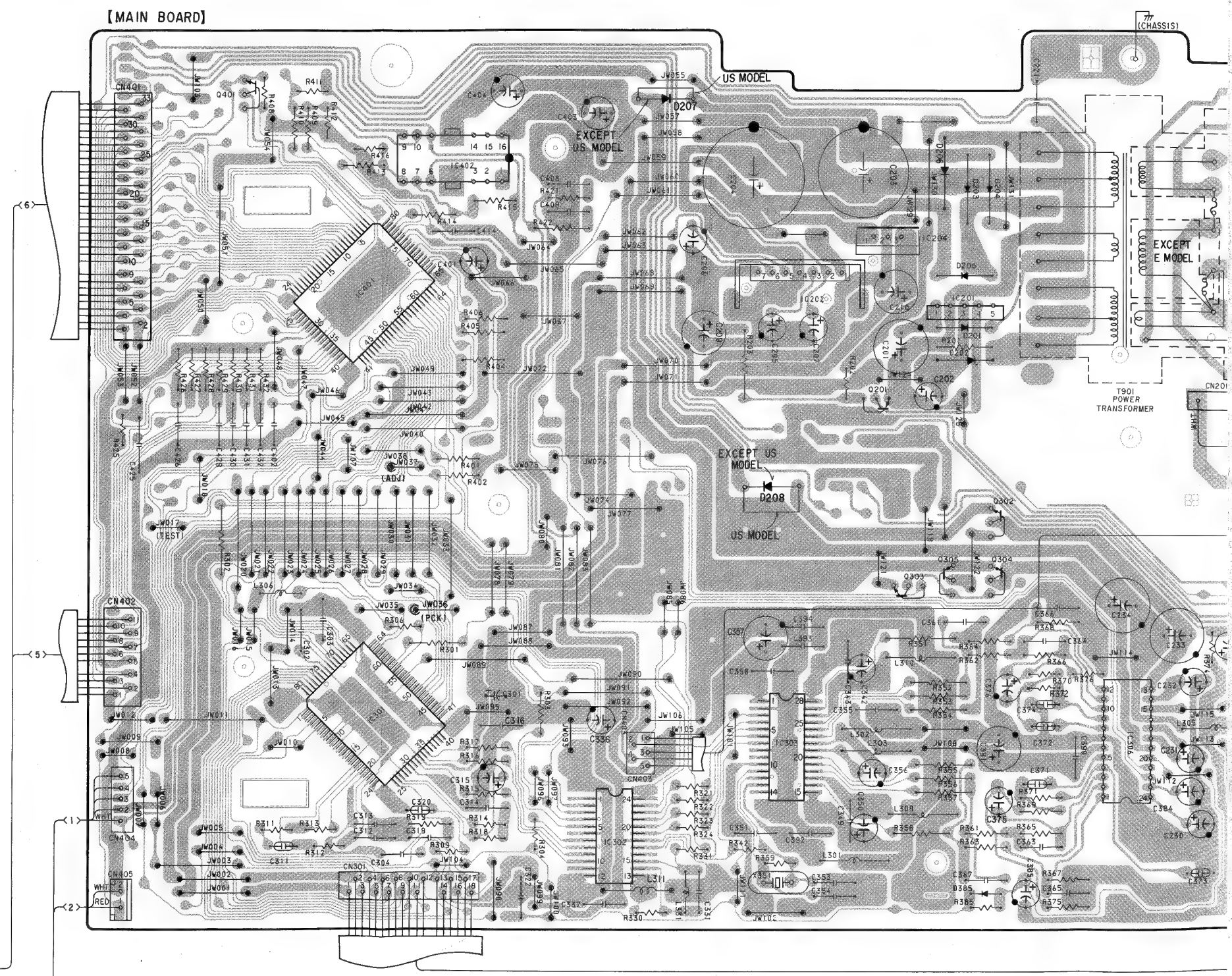
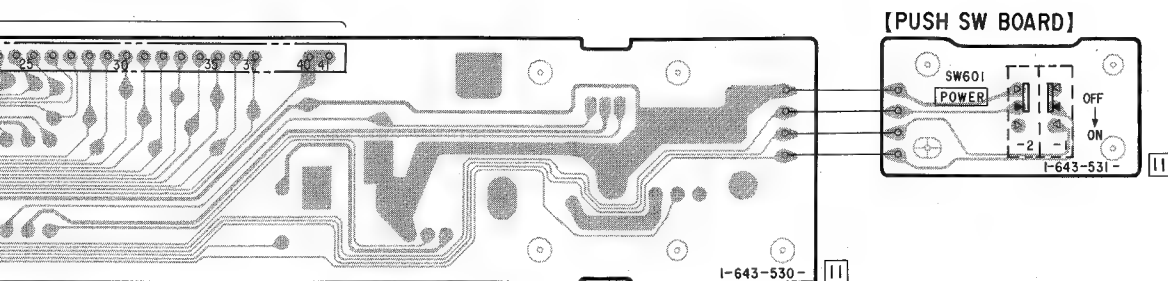
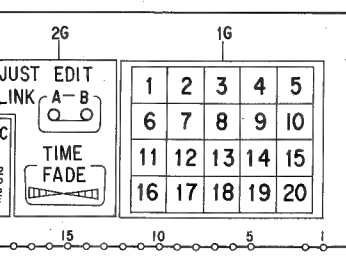
Note:

- — : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.

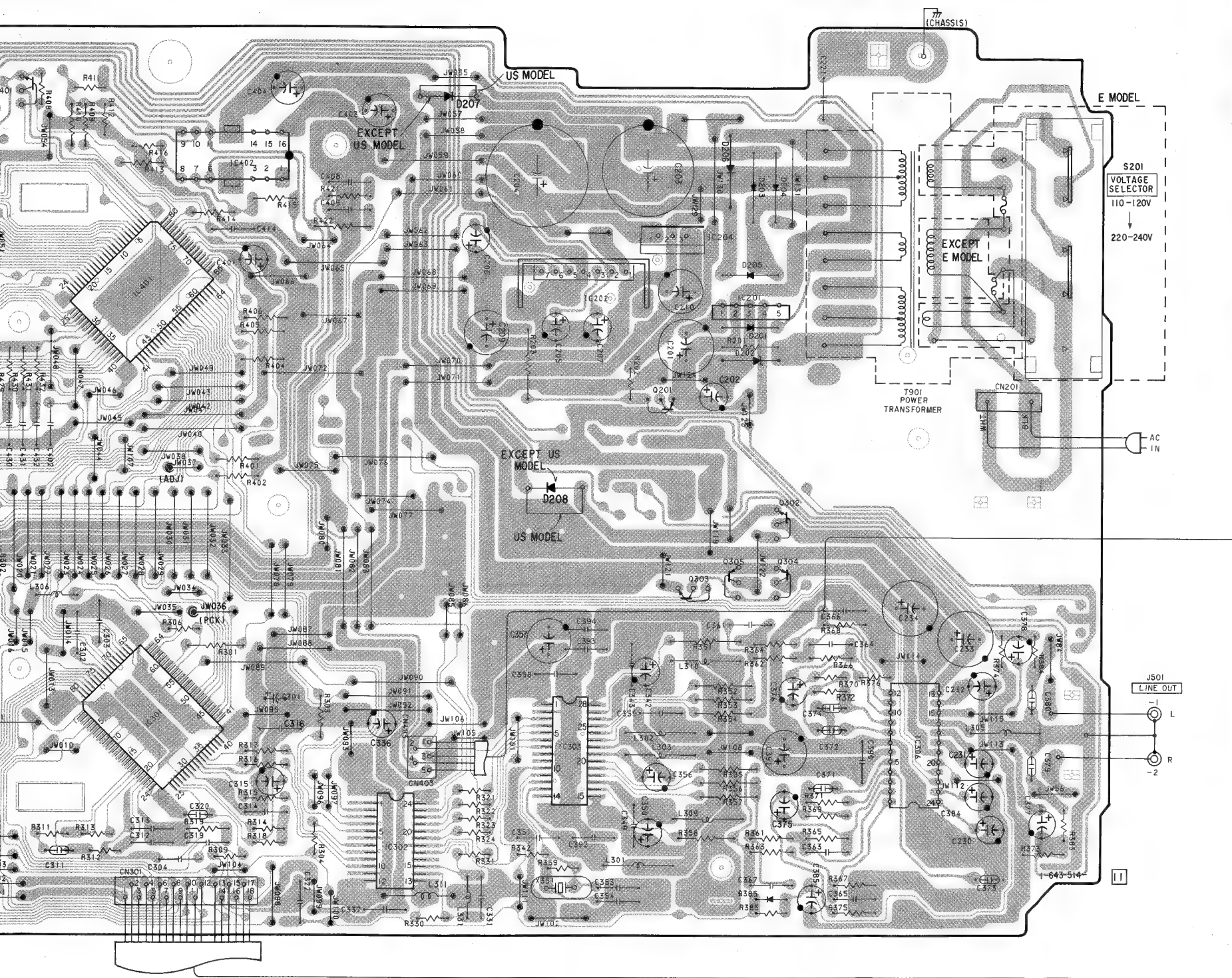
3-3. PRINTED WIRING BOARDS ● Refer to page 7 for Semiconductor Lead Layouts.



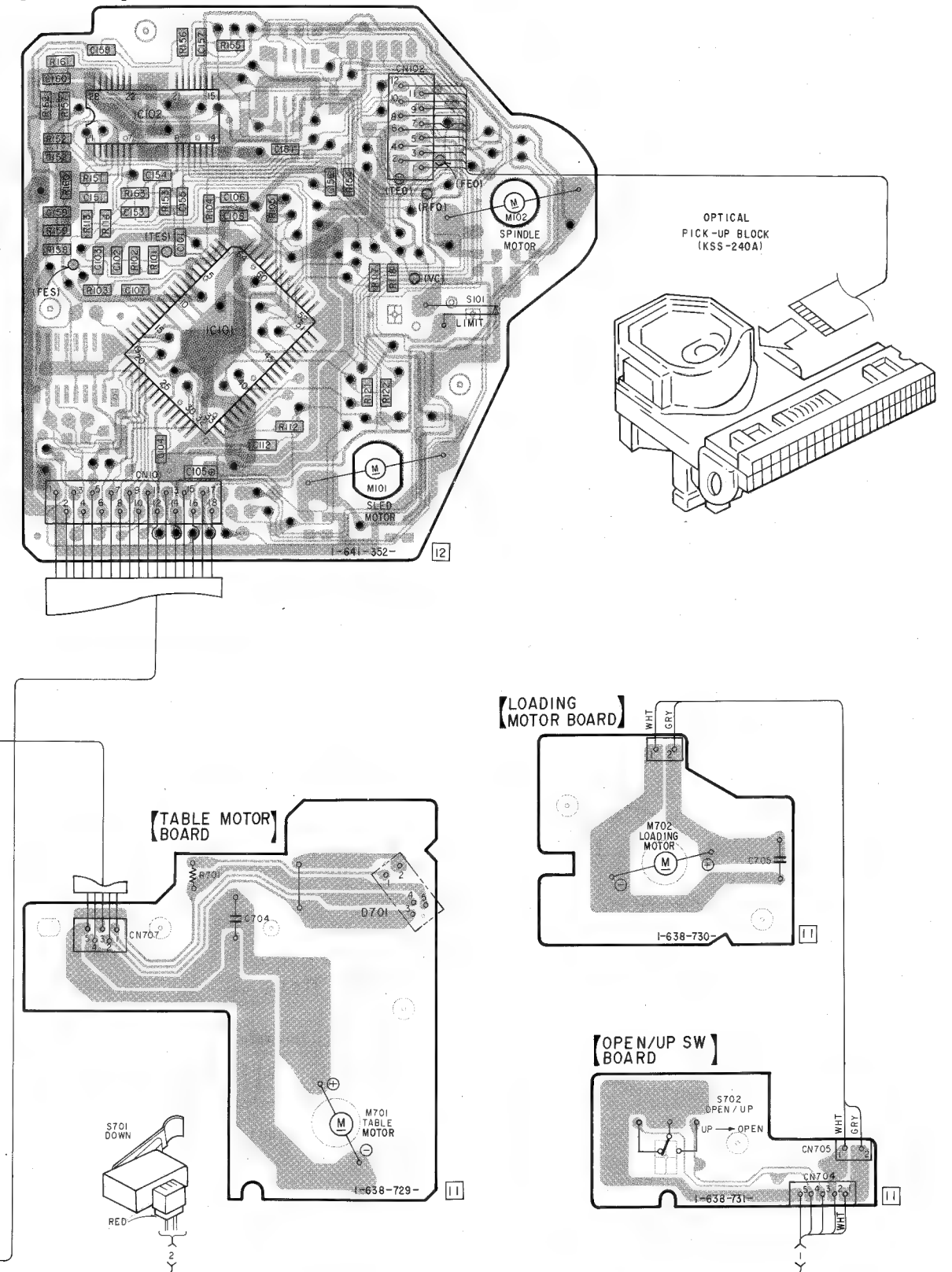
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----



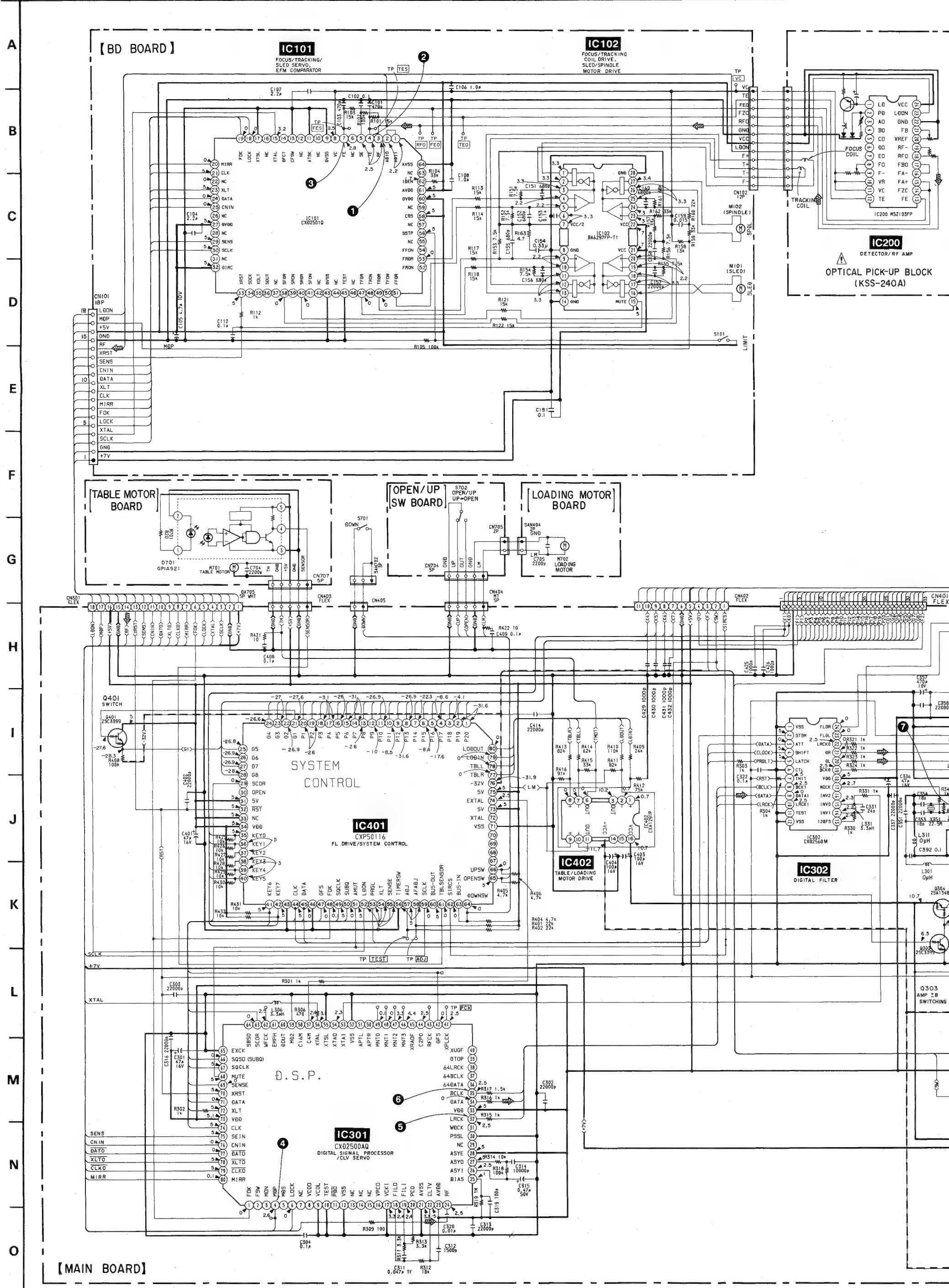
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

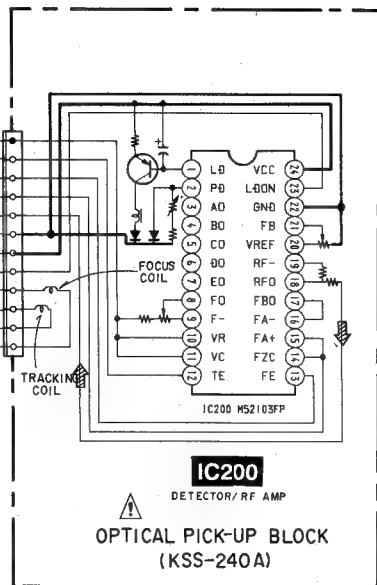


[BD BOARD]

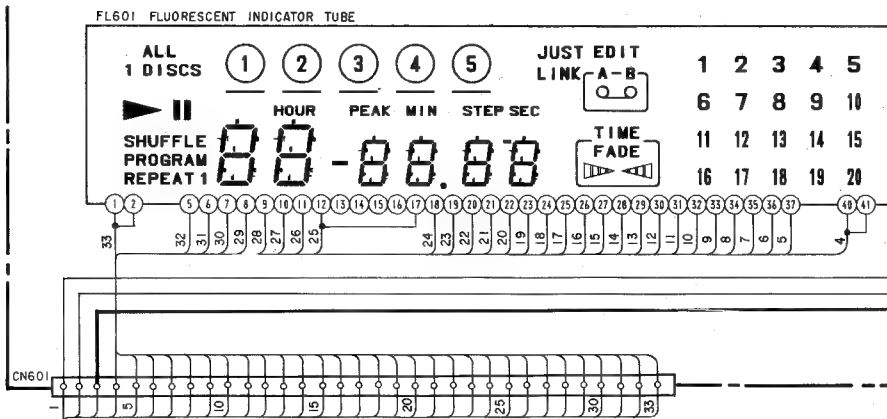


1	2	3	4	5	6	7	8	9	10	11
---	---	---	---	---	---	---	---	---	----	----

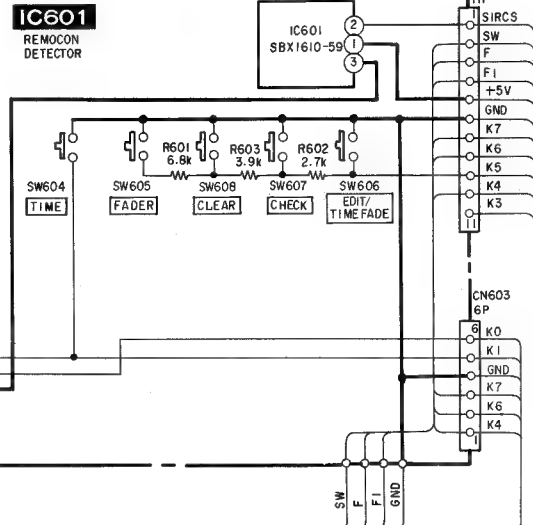




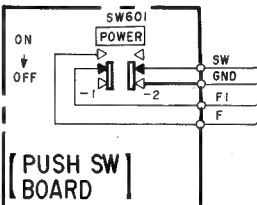
[DISPLAY BOARD]



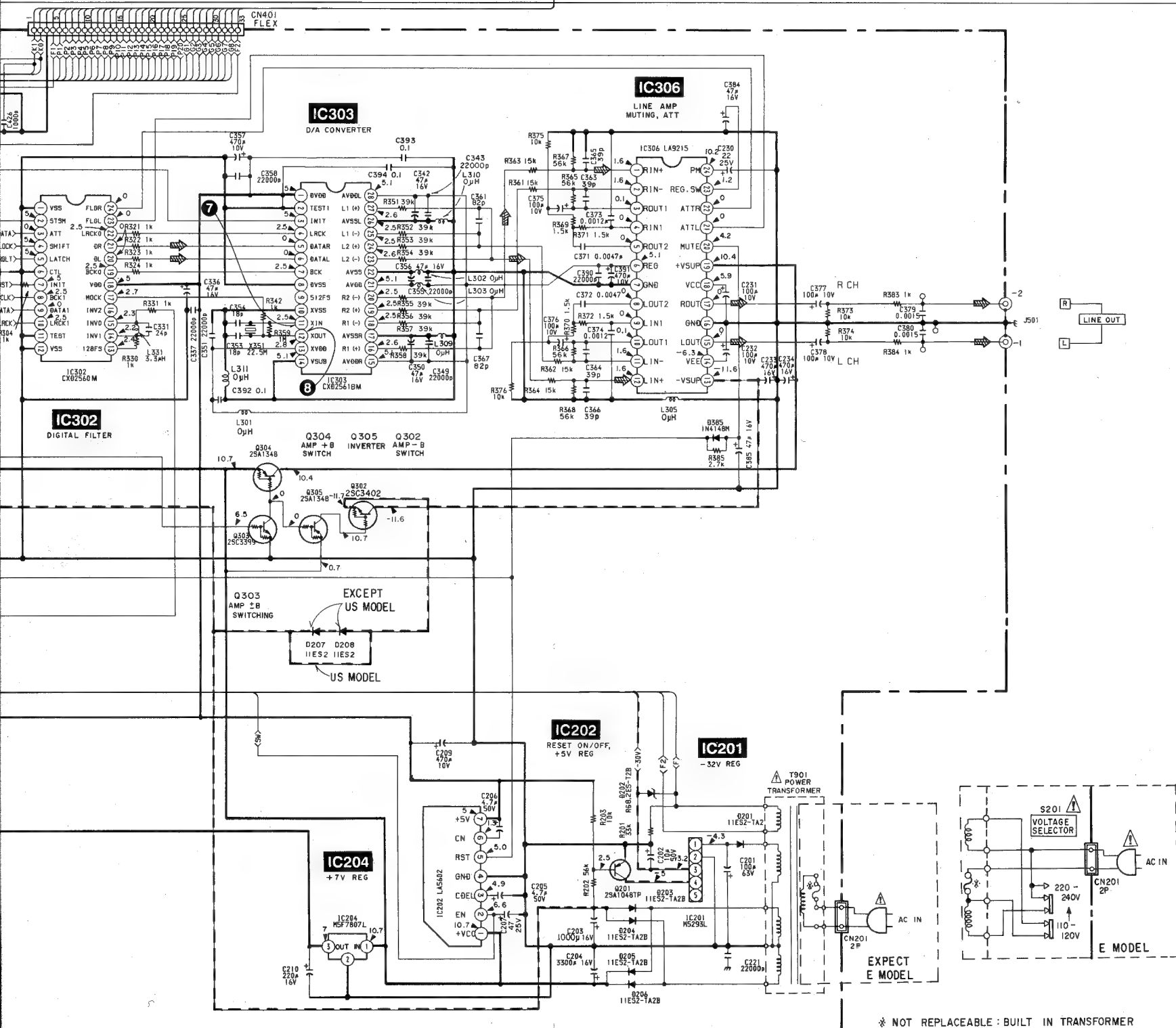
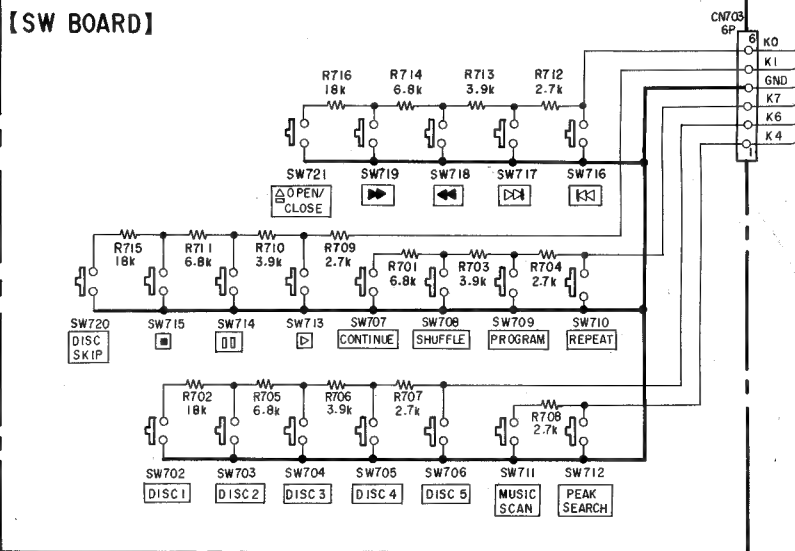
IC601
REMOCOD DETECTOR

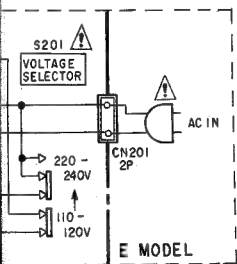
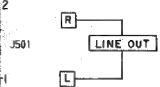
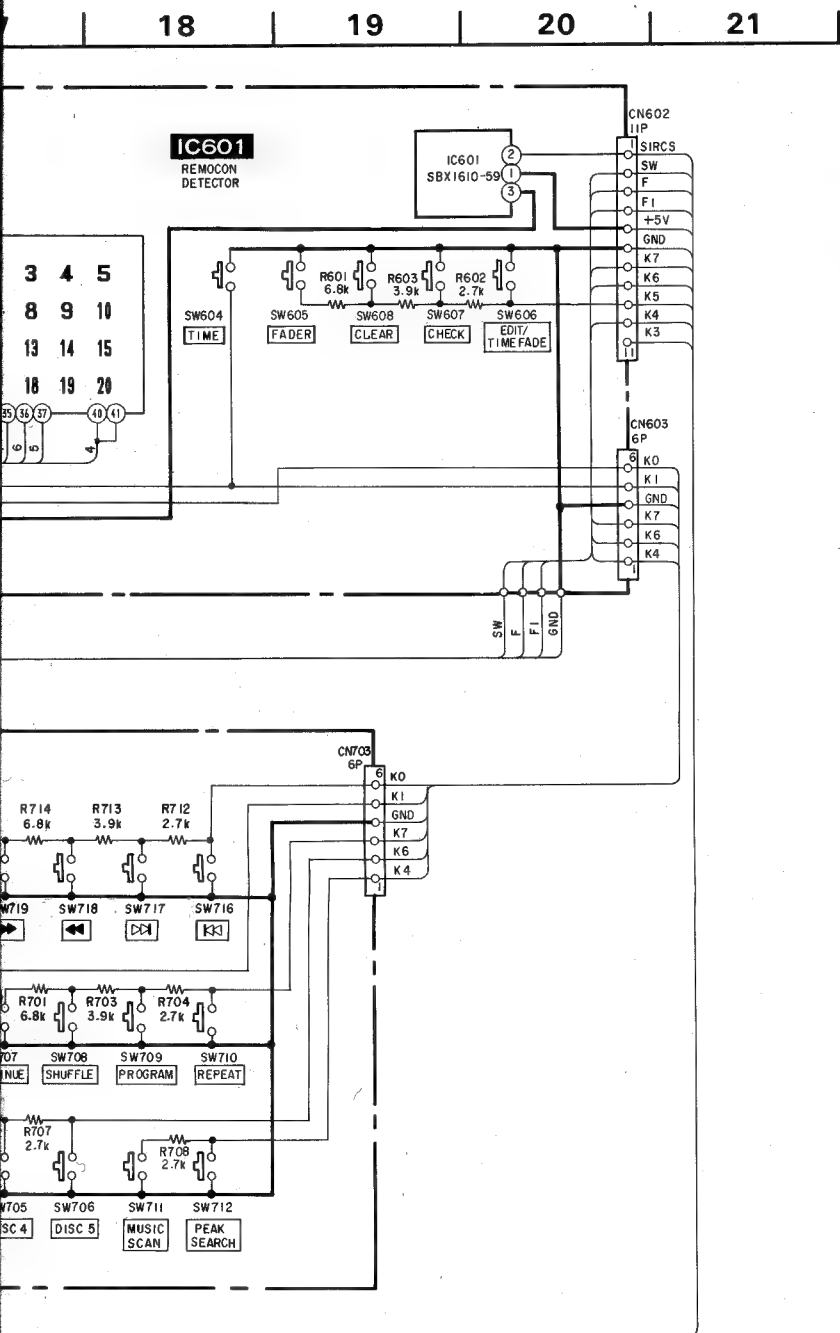


[PUSH SW BOARD]



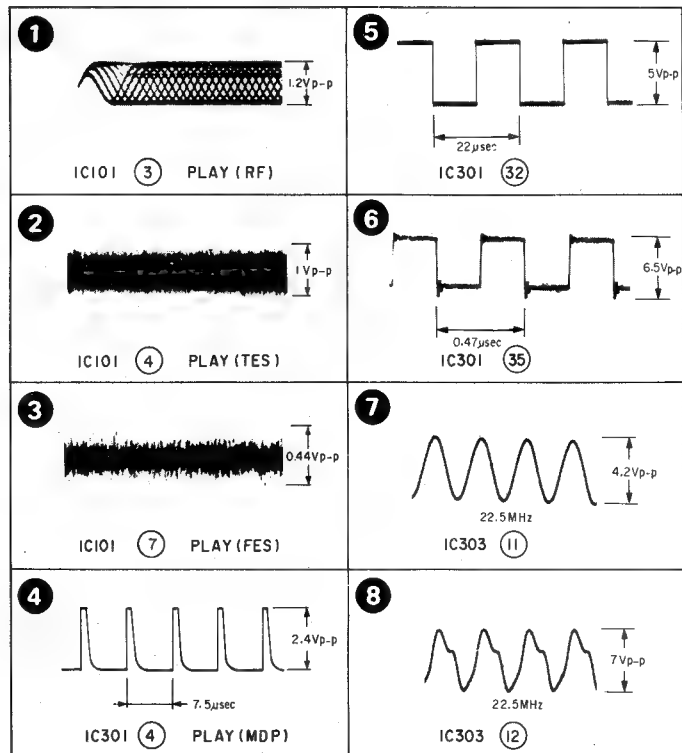
[SW BOARD]





LT IN TRANSFORMER

• Waveforms



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- — : B+ Line
- - - - : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$) Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.

Δ : CD



SECTION 4
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

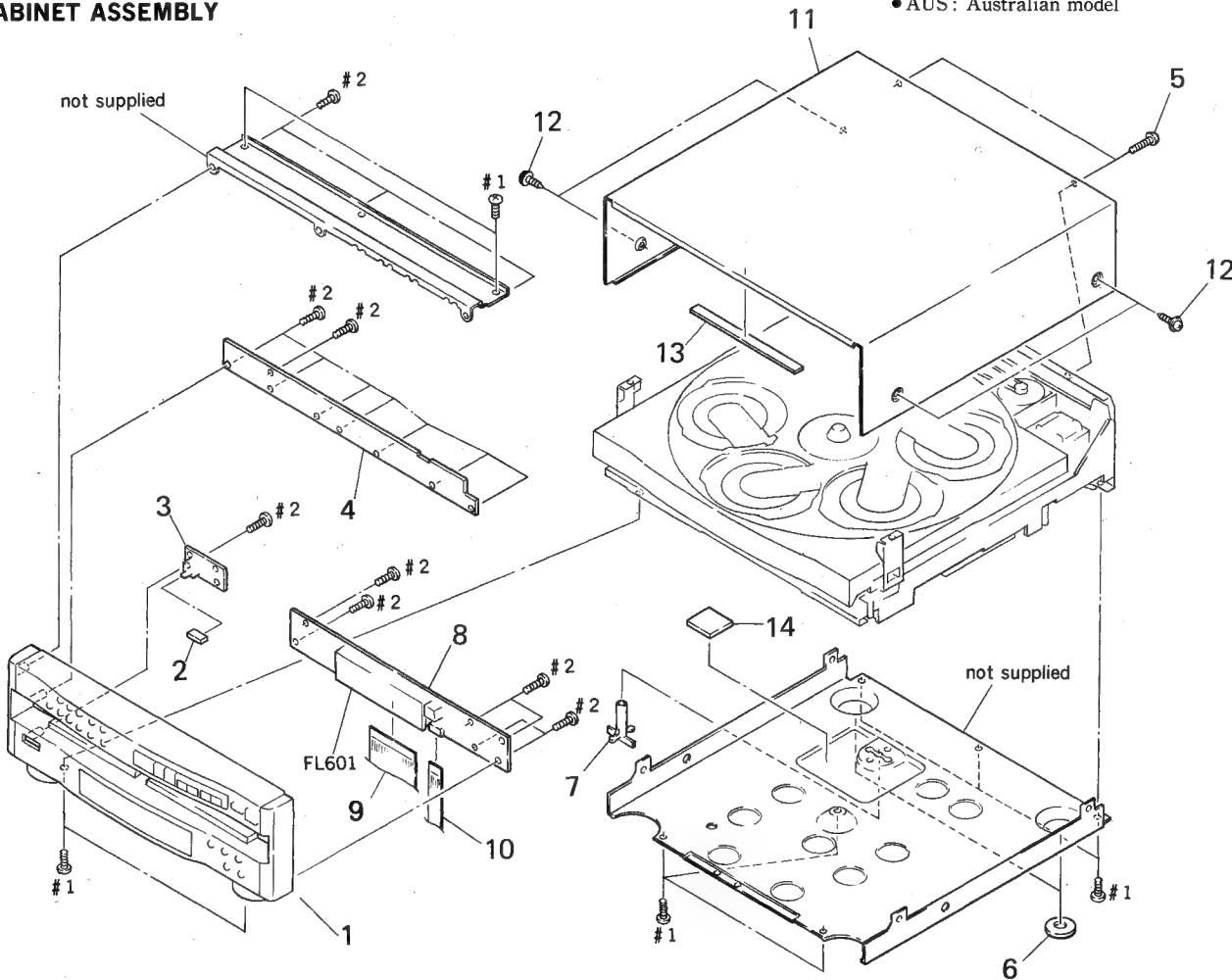
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE)...(RED)
Parts Color Cabinet's Color

- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

- AUS: Australian model

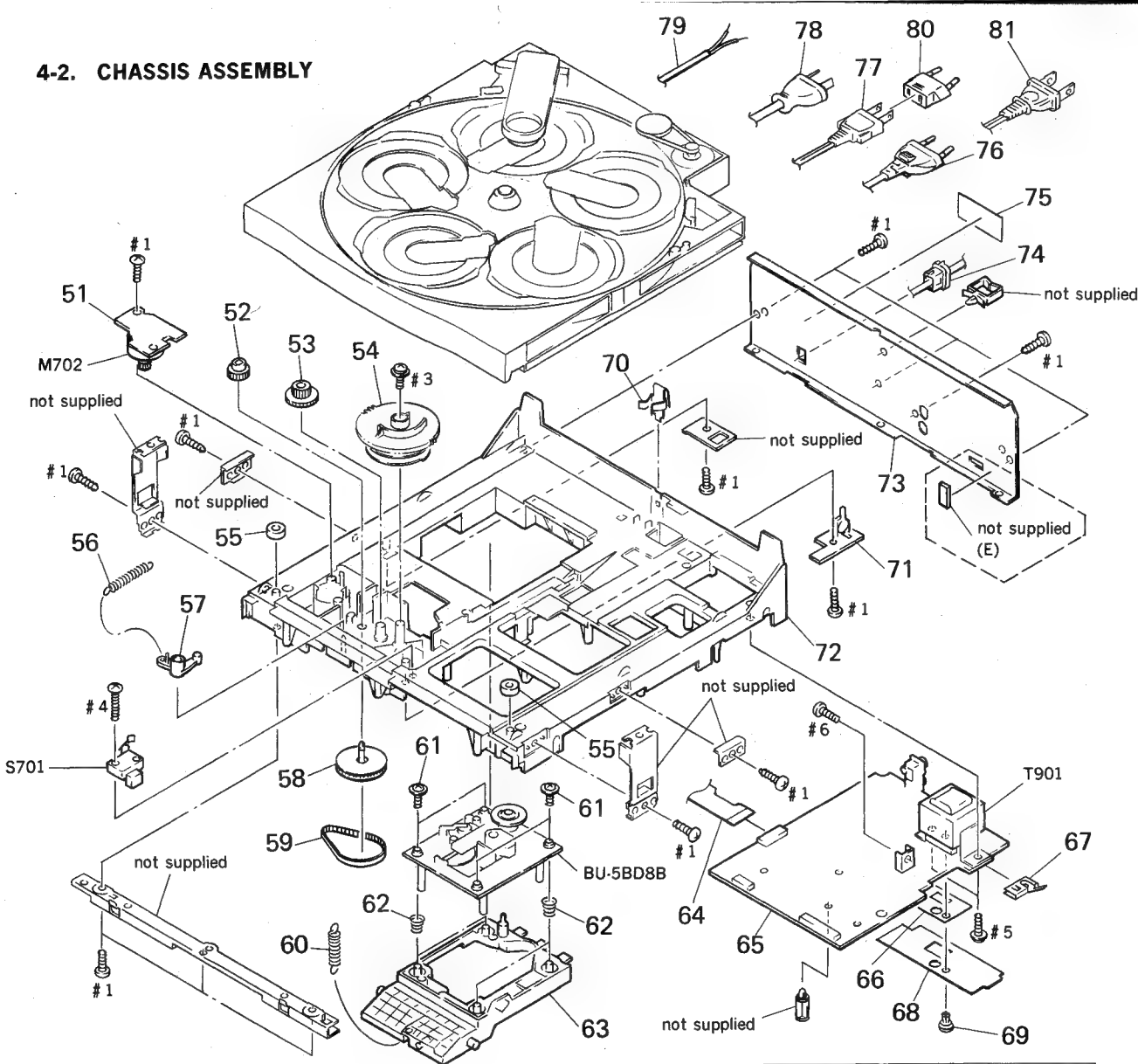
4-1. CABINET ASSEMBLY





Ref. No.	Part No.	Description	Remark
1	X-4942-544-1	PANEL ASSY, FRONT (AEP:BLACK)	
1	X-4942-545-1	PANEL ASSY, FRONT (UK, AEP:GRAY)	
1	X-4942-546-1	PANEL ASSY, FRONT (US)	
1	X-4942-547-1	PANEL ASSY, FRONT (E, AUS)	
2	4-927-341-01	BUTTON (POWER)	
* 3	1-643-531-11	PUSH SW BOARD	
* 4	1-643-529-11	SW BOARD	
5	3-703-685-21	SCREW (+BV 3X8)	
6	4-924-410-01	FELT	
7	4-937-945-01	PLATE (TRANSPORT), LOCK	










Ref. No.	Part No.	Description	Remark
* 8	1-643-530-11	DISPLAY BOARD	
9	1-690-848-21	WIRE (FLAT TYPE) (33 CORE)	
10	1-690-849-21	WIRE (FLAT TYPE) (11 CORE)	
* 11	4-943-992-01	CASE (US, AEP:BLACK)	
* 11	4-943-992-11	CASE (UK, E, AUS, AEP:GRAY)	
12	3-704-366-01	SCREW (CASE) (M3X8)	
* 13	4-929-557-01	CUSHION (PANEL)	
* 14	4-951-946-01	SHEET	
FL601	1-519-721-11	INDICATOR TUBE, FLUORESCENT	

4-2. CHASSIS ASSEMBLY



Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

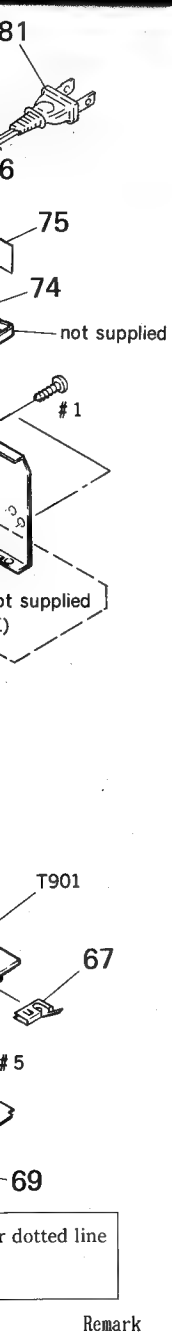
Ref. No.	Part No.	Description	Remark
* 51	1-638-730-11	LOADING MOTOR BOARD	
52	4-934-375-01	GEAR (LOADING B)	
53	4-934-381-01	GEAR (LOADING C)	
54	4-934-391-01	GEAR (LOADING A)	
* 55	4-951-619-01	CUSHION (A)	
56	4-924-412-01	SPRING (B), TENSION	
57	4-917-519-01	LEVER, SET	
58	X-4941-529-1	PULLEY ASSY	
59	4-944-490-01	BELT (TIMING)	
60	4-937-911-01	SPRING, TENSION	
61	4-933-134-01	SCREW (+PTPHW M2.6X6)	
62	4-949-385-01	SPRING (D), COIL	
* 63	4-934-373-01	BRACKET (BU)	
64	1-694-003-11	JAMPER, FILM (WITH TARMINAL)	
* 65	A-4649-204-A	MAIN BOARD, COMPLETE (AEP, UK, AUS)	
* 65	A-4649-212-A	MAIN BOARD, COMPLETE (US)	
* 65	A-4649-219-A	MAIN BOARD, COMPLETE (E)	
* 66	4-951-933-01	SHEET, INSULATING (AEP, UK, AUS)	
* 67	4-944-581-01	PLATE, GROUND	
* 68	4-944-178-01	SHEET (INSULATING)	
69	3-531-576-11	RIVET	

Ref. No.	Part No.	Description	Remark
* 70	4-943-996-01	SPRING, LEAF	
* 71	1-638-731-11	OPEN/UP SW BOARD	
* 72	4-943-997-01	CHASSIS	
* 73	4-949-861-01	PANEL, BACK (US)	
* 73	4-949-861-21	PANEL, BACK (AEP)	
* 73	4-949-861-31	PANEL, BACK (UK, AUS)	
* 73	4-949-861-41	PANEL, BACK (E)	
* 74	3-703-244-00	BUSHING (2104), CORD (EXCEPT E)	
* 74	3-703-571-11	BUSHING (S) (4516), CORD (E)	
* 75	4-941-548-01	LABEL, CLASS 1 (EXCEPT US)	
 76	1-575-651-21	CORD, POWER (AEP)	
 77	1-575-653-21	CORD, POWER (E)	
 78	1-574-358-31	CORD, POWER (WITH CONNECTOR) (AUS)	
 79	1-558-946-21	CORD, POWER (UK)	
 80	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
 81	1-590-836-11	CORD, POWER (US)	
M702	A-4604-834-A	MOTOR ASSY, LOADING	
S701	1-572-713-11	SWITCH, PUSH (WITH CONNECTOR)	
 T901	1-449-955-11	TRANSFORMER, POWER (AEP, UK, AUS)	
 T901	1-449-956-11	TRANSFORMER, POWER (E)	
 T901	1-450-876-11	TRANSFORMER, POWER (US)	

4-3. TRAY

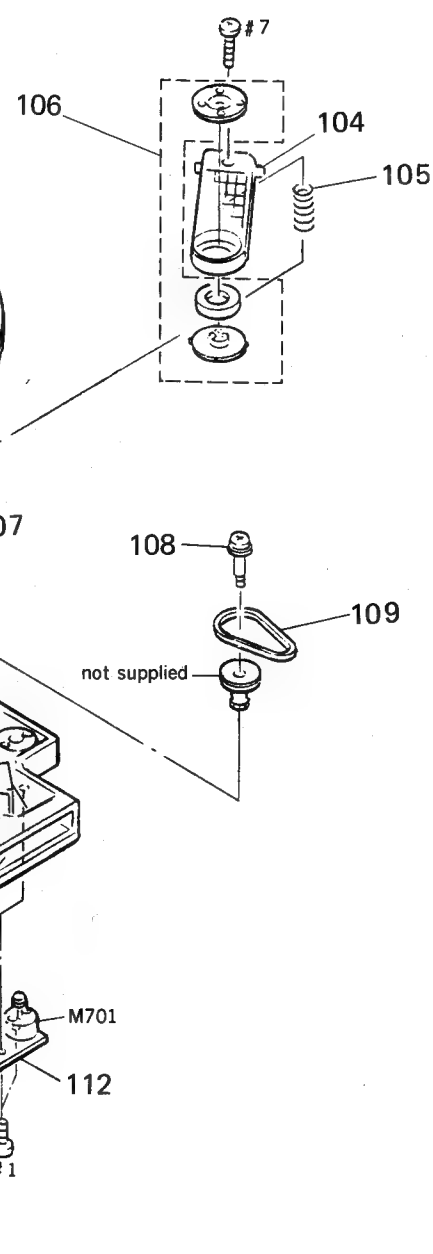
103

Ref. No.	Part No.
101	4-926-38
* 102	4-926-38
* 103	4-949-22
* 104	4-930-50
105	4-926-39
* 106	1-452-53
* 107	4-926-38
108	4-923-59



4-3. TRAY ASSEMBLY

Ref. No.	Part No.	Description	Remark
101	4-926-384-01	SCREW, STEP	
* 102	4-926-383-01	TABLE (B), DISK	
* 103	4-949-226-01	PLATE, LOCK	
* 104	4-930-506-02	BRACKET (PRESS PULLEY)	
105	4-926-395-01	SPRING, COMPRESSION	
* 106	1-452-538-11	MAGNET	
* 107	4-926-388-01	BRACKET (ADJUSTMENT)	
108	4-923-597-01	SCREW, STEP	



4-4. OPTICAL PICK-UP BLOCK (BU-5BD8B)

Ref. No.	Part No.	Description	Remark
151	4-917-565-01	SHAFT, SLED	
* 152	4-951-940-01	INSULATOR (BU)	
* 153	A-4649-199-A	BD BOARD, COMPLETE	
154	4-917-567-01	GEAR (M)	
155	4-917-564-01	GEAR (P), FLATNESS	

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
Δ 156	8-848-144-11	DEVICE, OPTICAL KSS-240A	
157	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-504-1	MOTOR ASSY, SLED	
M102	X-4917-523-3	MOTOR ASSY, SPINDLE	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

SECTION 5 ELECTRICAL PARTS LIST

BD

DISPLAY

PUSH SW

SW

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A.. uPA...: μ PA..
uPB...: μ PB.. uPC...: μ PC.. uPD...: μ PD..
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

● AUS: Australian model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4649-199-A	BD BOARD, COMPLETE *****		R112	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< CAPACITOR >		R113	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C101	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	R114	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C102	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R117	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C103	1-163-005-11	CERAMIC CHIP 470PF	10% 50V	R118	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C104	1-164-505-11	CERAMIC CHIP 2.2uF	16V	R121	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C105	1-135-155-21	TANTALUM CHIP 4.7uF	10% 16V	R122	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C106	1-164-346-11	CERAMIC CHIP 1uF	16V	R151	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C107	1-164-505-11	CERAMIC CHIP 2.2uF	16V	R152	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C108	1-164-346-11	CERAMIC CHIP 1uF	16V	R153	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C112	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R154	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C151	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R155	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C152	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R156	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
C153	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R157	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C154	1-164-336-11	CERAMIC CHIP 0.33uF	25V	R158	1-216-076-00	METAL CHIP 13K 5% 1/10W	
C155	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R159	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C156	1-163-007-11	CERAMIC CHIP 680PF	10% 50V	R160	1-216-081-00	METAL CHIP 22K 5% 1/10W	
C157	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	R161	1-216-093-00	METAL CHIP 68K 5% 1/10W	
C158	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V	R162	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C159	1-163-023-00	CERAMIC CHIP 0.015uF	5% 50V	R163	1-216-308-00	METAL CHIP 4.7 5% 1/10W	
C160	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V			< SWITCH >	
C181	1-163-038-00	CERAMIC CHIP 0.1uF	25V	S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
		< CONNECTOR >		*****			
CN101	1-568-861-11	SOCKET, CONNECTOR 18P		*	1-643-530-11	DISPLAY BOARD	
CN102	1-568-795-11	SOCKET, CONNECTOR 12P				*****	
		< IC >		*	1-643-531-11	PUSH SW BOARD	
IC101	8-752-344-48	IC CXD2501Q				*****	
IC102	8-759-071-79	IC BA6297AFP		*	1-643-529-11	SW BOARD	
		< RESISTOR >				*****	
R101	1-216-077-00	METAL CHIP 15K 5% 1/10W				< CONNECTOR >	
R102	1-216-097-00	METAL CHIP 100K 5% 1/10W		* CN601	1-691-901-11	SOCKET, CONNECTOR (L TYPE) 33P	
R103	1-216-077-00	METAL CHIP 15K 5% 1/10W		* CN602	1-691-889-11	SOCKET, CONNECTOR (L TYPE) 11P	
R104	1-216-085-00	METAL CHIP 33K 5% 1/10W		* CN703	1-568-944-11	PIN, CONNECTOR 6P	
R105	1-216-097-00	METAL CHIP 100K 5% 1/10W				< FLUORESCENT INDICATOR >	
				FL601	1-519-721-11	INDICATOR TUBE, FLUORESCENT	

DISPLAY

PUSH SW

SW

LOADING MOTOR

OPEN/UP SW

TABLE MOTOR

MAIN

Ref. No.	Part No.	Description	Remark
< IC >			
IC601	8-741-100-48	IC SBX1610-59	
< RESISTOR >			
R601	1-249-427-11	CARBON 6.8K 5% 1/4W	
R602	1-249-422-11	CARBON 2.7K 5% 1/4W	
R603	1-249-424-11	CARBON 3.9K 5% 1/4W	
R701	1-249-427-11	CARBON 6.8K 5% 1/4W	
R702	1-249-432-11	CARBON 18K 5% 1/4W	
R703	1-249-424-11	CARBON 3.9K 5% 1/4W	
R704	1-249-422-11	CARBON 2.7K 5% 1/4W	
R705	1-249-427-11	CARBON 6.8K 5% 1/4W	
R706	1-249-424-11	CARBON 3.9K 5% 1/4W	
R707	1-249-422-11	CARBON 2.7K 5% 1/4W	
R708	1-249-422-11	CARBON 2.7K 5% 1/4W	
R709	1-249-422-11	CARBON 2.7K 5% 1/4W	
R710	1-249-424-11	CARBON 3.9K 5% 1/4W	
R711	1-249-427-11	CARBON 6.8K 5% 1/4W	
R712	1-249-422-11	CARBON 2.7K 5% 1/4W	
R713	1-249-424-11	CARBON 3.9K 5% 1/4W	
R714	1-249-427-11	CARBON 6.8K 5% 1/4W	
R715	1-249-432-11	CARBON 18K 5% 1/4W	
R716	1-249-432-11	CARBON 18K 5% 1/4W	
< SWITCH >			
SW601	1-572-714-11	SWITCH, PUSH (POWER)	
SW604	1-554-303-21	SWITCH, TACTILE (TIME)	
SW605	1-554-303-21	SWITCH, TACTILE (FADER)	
SW606	1-554-303-21	SWITCH, TACTILE (EDIT/TIME)	
SW607	1-554-303-21	SWITCH, TACTILE (CHECK)	
SW608	1-554-303-21	SWITCH, TACTILE (CLEAR)	
SW702	1-554-303-21	SWITCH, TACTILE (DISC 1)	
SW703	1-554-303-21	SWITCH, TACTILE (DISC 2)	
SW704	1-554-303-21	SWITCH, TACTILE (DISC 3)	
SW705	1-554-303-21	SWITCH, TACTILE (DISC 4)	
SW706	1-554-303-21	SWITCH, TACTILE (DISC 5)	
SW707	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
SW708	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
SW709	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
SW710	1-554-303-21	SWITCH, TACTILE (REPEAT)	
SW711	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
SW712	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
SW713	1-554-303-21	SWITCH, TACTILE (▷)	
SW714	1-554-303-21	SWITCH, TACTILE (■)	
SW715	1-554-303-21	SWITCH, TACTILE (■)	
SW716	1-554-303-21	SWITCH, TACTILE (Ⓚ)	
SW717	1-554-303-21	SWITCH, TACTILE (▷▷)	
SW718	1-554-303-21	SWITCH, TACTILE (◀◀)	

Ref. No.	Part No.	Description	Remark
SW719	1-554-303-21	SWITCH, TACTILE (▷▷)	
SW720	1-554-303-21	SWITCH, TACTILE (DISC SKIP)	
SW721	1-554-303-21	SWITCH, TACTILE (△OPEN/CLOSE)	

*	1-638-730-11	LOADING MOTOR BOARD	

*	1-638-731-11	OPEN/UP SW BOARD	

*	1-638-729-11	TABLE MOTOR BOARD	

< CAPACITOR >			
C704	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C705	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
< CONNECTOR >			
* CN705	1-573-383-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN707	1-573-044-11	SOCKET, CONNECTOR 5P	
< DIODE >			
D701	8-719-970-19	DIODE GP-1A521	
< RESISTOR >			
R701	1-249-416-11	CARBON 820 5% 1/4W	
< SWITCH >			
S702	1-571-300-21	SWITCH, ROTARY (OPEN/UP)	

*	A-4649-212-A	MAIN BOARD, COMPLETE (US)	
*	A-4649-204-A	MAIN BOARD, COMPLETE (AEP, UK, AUS)	
*	A-4649-219-A	MAIN BOARD, COMPLETE (E)	

	7-682-548-04	SCREW +BVTT 3X8 (S)	
< CAPACITOR >			
C201	1-124-572-11	ELECT 100uF 20% 63V	
C202	1-126-059-11	ELECT 10uF 20% 50V	
C203	1-124-360-11	ELECT 1000uF 20% 16V	
C204	1-124-887-00	ELECT 3300uF 20% 16V	
C205	1-126-163-11	ELECT 4.7uF 20% 50V	
C206	1-126-163-11	ELECT 4.7uF 20% 50V	
C207	1-124-910-11	ELECT 47uF 20% 50V	
C209	1-124-997-11	ELECT 470uF 20% 10V	
C210	1-126-024-11	ELECT 220uF 20% 16V	
C221	1-161-494-00	CERAMIC 0.022uF 25V	
C230	1-126-049-11	ELECT 22uF 20% 25V	
C231	1-124-994-11	ELECT 100uF 20% 10V	

Ref. No.	Part No.	Description	Remark
C232	1-124-994-11	ELECT	100uF 20% 10V
C233	1-126-012-11	ELECT	470uF 20% 16V
C234	1-126-012-11	ELECT	470uF 20% 16V
C301	1-126-022-11	ELECT	47uF 20% 16V
C302	1-161-494-00	CERAMIC	0.022uF 25V
C303	1-161-494-00	CERAMIC	0.022uF 25V
C304	1-164-159-11	CERAMIC	0.1uF 50V
C311	1-136-161-00	FILM	0.047uF 5% 50V
C312	1-161-374-11	CERAMIC	0.0015uF 20% 50V
C313	1-161-494-00	CERAMIC	0.022uF 25V
C314	1-162-306-11	CERAMIC	0.01uF 20% 16V
C315	1-126-300-11	ELECT	0.47uF 20% 50V
C316	1-161-494-00	CERAMIC	0.022uF 25V
C319	1-162-282-31	CERAMIC	100PF 10% 50V
C320	1-130-483-00	MYLAR	0.01uF 5% 50V
C322	1-164-159-11	CERAMIC	0.1uF 50V
C331	1-162-208-31	CERAMIC	24PF 5% 50V
C336	1-126-022-11	ELECT	47uF 20% 16V
C337	1-161-494-00	CERAMIC	0.022uF 25V
C342	1-126-022-11	ELECT	47uF 20% 16V
C343	1-161-494-00	CERAMIC	0.022uF 25V
C349	1-161-494-00	CERAMIC	0.022uF 25V
C350	1-126-022-11	ELECT	47uF 20% 16V
C351	1-161-494-00	CERAMIC	0.022uF 25V
C353	1-162-205-31	CERAMIC	18PF 5% 50V
C354	1-162-205-31	CERAMIC	18PF 5% 50V
C355	1-161-494-00	CERAMIC	0.022uF 25V
C356	1-126-022-11	ELECT	47uF 20% 16V
C357	1-124-997-11	ELECT	470uF 20% 10V
C358	1-161-494-00	CERAMIC	0.022uF 25V
C361	1-162-280-31	CERAMIC	82PF 10% 50V
C363	1-162-213-31	CERAMIC	39PF 5% 50V
C364	1-162-213-31	CERAMIC	39PF 5% 50V
C365	1-162-213-31	CERAMIC	39PF 5% 50V
C366	1-162-213-31	CERAMIC	39PF 5% 50V
C367	1-162-280-31	CERAMIC	82PF 10% 50V
C371	1-130-479-00	MYLAR	0.0047uF 5% 50V
C372	1-130-479-00	MYLAR	0.0047uF 5% 50V
C373	1-130-472-00	MYLAR	0.0012uF 5% 50V
C374	1-130-472-00	MYLAR	0.0012uF 5% 50V
C375	1-124-994-11	ELECT	100uF 20% 10V
C376	1-124-994-11	ELECT	100uF 20% 10V
C377	1-124-994-11	ELECT	100uF 20% 10V
C378	1-124-994-11	ELECT	100uF 20% 10V
C379	1-130-473-00	MYLAR	0.0015uF 5% 50V
C380	1-130-473-00	MYLAR	0.0015uF 5% 50V
C384	1-126-022-11	ELECT	47uF 20% 16V
C385	1-126-022-11	ELECT	47uF 20% 16V
C390	1-161-494-00	CERAMIC	0.022uF 25V

Ref. No.	Part No.	Description	Remark
C391	1-124-997-11	ELECT	470uF 20% 10V
C392	1-164-159-11	CERAMIC	0.1uF 50V
C393	1-164-159-11	CERAMIC	0.1uF 50V
C394	1-164-159-11	CERAMIC	0.1uF 50V
C401	1-126-022-11	ELECT	47uF 20% 16V
C402	1-161-494-00	CERAMIC	0.022uF 25V
C403	1-126-023-11	ELECT	100uF 20% 16V
C404	1-126-023-11	ELECT	100uF 20% 16V
C408	1-164-159-11	CERAMIC	0.1uF 50V
C409	1-164-159-11	CERAMIC	0.1uF 50V
C414	1-161-494-00	CERAMIC	0.022uF 25V
C425	1-162-294-31	CERAMIC	0.001uF 10% 50V
C426	1-162-294-31	CERAMIC	0.001uF 10% 50V
C429	1-162-294-31	CERAMIC	0.001uF 10% 50V
C430	1-162-294-31	CERAMIC	0.001uF 10% 50V
C431	1-162-294-31	CERAMIC	0.001uF 10% 50V
C432	1-162-294-31	CERAMIC	0.001uF 10% 50V

< CONNECTOR >

- * CN201 1-573-047-11 PIN, CONNECTOR (PC BOARD) 2P
- * CN301 1-691-895-11 SOCKET, CONNECTOR (L TYPE) 18P
- * CN401 1-691-901-11 SOCKET, CONNECTOR (L TYPE) 33P
- CN402 1-691-889-11 SOCKET, CONNECTOR (L TYPE) 11P
- * CN403 1-568-824-11 SOCKET, CONNECTOR 5P
- * CN404 1-568-943-11 PIN, CONNECTOR 5P

< DIODE >

D201	8-719-200-82	DIODE	11ES2
D202	8-719-110-08	DIODE	RD8. 2ES-B2
D203	8-719-200-82	DIODE	11ES2
D204	8-719-200-82	DIODE	11ES2
D205	8-719-200-82	DIODE	11ES2
D206	8-719-200-82	DIODE	11ES2
D207	8-719-200-82	DIODE	11ES2 (EXCEPT E)
D208	8-719-200-82	DIODE	11ES2 (EXCEPT E)
D385	8-719-987-63	DIODE	1N4148M

< IC >

IC201	8-759-633-42	IC	M5293L
IC202	8-759-061-65	IC	LA5602
IC204	8-759-604-86	IC	M5F7807L
IC301	8-752-337-26	IC	CXD2500AQ
IC302	8-752-342-65	IC	CXD2560M
IC303	8-752-351-19	IC	CXD2561BM
IC306	8-759-061-66	IC	LA9215
IC401	8-752-837-01	IC	CXP50116-287Q
IC402	8-759-821-32	IC	CXA1291P

MAIN

Ref. No.	Part No.	Description	Remark
< JACK >			
J501	1-569-442-11	JACK, PIN 2P (LINE OUT)	
< COIL >			
L301	1-412-473-21	INDUCTOR 0uH	
L302	1-412-473-21	INDUCTOR 0uH	
L303	1-412-473-21	INDUCTOR 0uH	
L305	1-412-473-21	INDUCTOR 0uH	
L306	1-412-297-11	INDUCTOR 3.3uH	
L309	1-412-473-21	INDUCTOR 0uH	
L310	1-412-473-21	INDUCTOR 0uH	
L311	1-412-473-21	INDUCTOR 0uH	
L331	1-412-297-11	INDUCTOR 3.3uH	
< TRANSISTOR >			
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q302	8-729-900-80	TRANSISTOR DTC114ES	
Q303	8-729-900-89	TRANSISTOR DTC144ES	
Q304	8-729-900-61	TRANSISTOR DTA114ES	
Q305	8-729-900-61	TRANSISTOR DTA114ES	
Q401	8-729-900-89	TRANSISTOR DTC144ES	
< RESISTOR >			
R201	1-249-435-11	CARBON 33K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R301	1-249-417-11	CARBON 1K 5% 1/4W	
R302	1-249-417-11	CARBON 1K 5% 1/4W	
R303	1-249-417-11	CARBON 1K 5% 1/4W	
R304	1-249-417-11	CARBON 1K 5% 1/4W	
R306	1-249-413-11	CARBON 470 5% 1/4W	
R309	1-249-405-11	CARBON 100 5% 1/4W	
R311	1-249-423-11	CARBON 3.3K 5% 1/4W	
R312	1-249-429-11	CARBON 10K 5% 1/4W	
R313	1-249-423-11	CARBON 3.3K 5% 1/4W	
R314	1-249-429-11	CARBON 10K 5% 1/4W	
R315	1-249-417-11	CARBON 1K 5% 1/4W	
R316	1-249-417-11	CARBON 1K 5% 1/4W	
R317	1-249-419-11	CARBON 1.5K 5% 1/4W	
R318	1-249-441-11	CARBON 100K 5% 1/4W	
R319	1-247-903-00	CARBON 1M 5% 1/4W	
R321	1-249-417-11	CARBON 1K 5% 1/4W	
R322	1-249-417-11	CARBON 1K 5% 1/4W	
R323	1-249-417-11	CARBON 1K 5% 1/4W	
R324	1-249-417-11	CARBON 1K 5% 1/4W	
R330	1-249-417-11	CARBON 1K 5% 1/4W	
R331	1-249-417-11	CARBON 1K 5% 1/4W	
R342	1-249-417-11	CARBON 1K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R351	1-249-436-11	CARBON 39K 5% 1/4W	
R352	1-249-436-11	CARBON 39K 5% 1/4W	
R353	1-249-436-11	CARBON 39K 5% 1/4W	
R354	1-249-436-11	CARBON 39K 5% 1/4W	
R355	1-249-436-11	CARBON 39K 5% 1/4W	
R356	1-249-436-11	CARBON 39K 5% 1/4W	
R357	1-249-436-11	CARBON 39K 5% 1/4W	
R358	1-249-436-11	CARBON 39K 5% 1/4W	
R359	1-247-903-00	CARBON 1M 5% 1/4W	
R361	1-249-431-11	CARBON 15K 5% 1/4W	
R362	1-249-431-11	CARBON 15K 5% 1/4W	
R363	1-249-431-11	CARBON 15K 5% 1/4W	
R364	1-249-431-11	CARBON 15K 5% 1/4W	
R365	1-249-438-11	CARBON 56K 5% 1/4W	
R366	1-249-438-11	CARBON 56K 5% 1/4W	
R367	1-249-438-11	CARBON 56K 5% 1/4W	
R368	1-249-438-11	CARBON 56K 5% 1/4W	
R369	1-249-419-11	CARBON 1.5K 5% 1/4W	
R370	1-249-419-11	CARBON 1.5K 5% 1/4W	
R371	1-249-419-11	CARBON 1.5K 5% 1/4W	
R372	1-249-419-11	CARBON 1.5K 5% 1/4W	
R373	1-249-429-11	CARBON 10K 5% 1/4W	
R374	1-249-429-11	CARBON 10K 5% 1/4W	
R375	1-249-429-11	CARBON 10K 5% 1/4W	
R376	1-249-429-11	CARBON 10K 5% 1/4W	
R383	1-249-417-11	CARBON 1K 5% 1/4W	
R384	1-249-417-11	CARBON 1K 5% 1/4W	
R385	1-249-422-11	CARBON 2.7K 5% 1/4W	
R401	1-249-433-11	CARBON 22K 5% 1/4W	
R402	1-249-433-11	CARBON 22K 5% 1/4W	
R404	1-249-425-11	CARBON 4.7K 5% 1/4W	
R405	1-249-425-11	CARBON 4.7K 5% 1/4W	
R406	1-249-425-11	CARBON 4.7K 5% 1/4W	
R408	1-249-441-11	CARBON 100K 5% 1/4W	
R409	1-247-864-11	CARBON 24K 5% 1/4W	
R410	1-247-880-11	CARBON 110K 5% 1/4W	
R411	1-249-440-11	CARBON 82K 5% 1/4W	
R412	1-247-876-11	CARBON 75K 5% 1/4W	
R413	1-249-440-11	CARBON 82K 5% 1/4W	
R414	1-247-874-11	CARBON 62K 5% 1/4W	
R415	1-249-435-11	CARBON 33K 5% 1/4W	
R416	1-247-878-00	CARBON 91K 5% 1/4W	
R421	1-249-393-11	CARBON 10 5% 1/4W	
R422	1-249-393-11	CARBON 10 5% 1/4W	
R425	1-249-429-11	CARBON 10K 5% 1/4W	
R426	1-249-429-11	CARBON 10K 5% 1/4W	
R427	1-249-429-11	CARBON 10K 5% 1/4W	
R428	1-249-429-11	CARBON 10K 5% 1/4W	
R429	1-249-429-11	CARBON 10K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R430	1-249-429-11	CARBON 10K 5% 1/4W	
R431	1-249-429-11	CARBON 10K 5% 1/4W	
R432	1-249-429-11	CARBON 10K 5% 1/4W	

< SWITCH >

△S201	1-571-722-11	SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR) (E)	
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< VIBRATOR >

X351	1-579-314-11	VIBRATOR, CRYSTAL (22.5MHz)	
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MISCELLANEOUS

9	1-690-848-21	WIRE (FLAT TYPE) (33 CORE)	
10	1-690-849-21	WIRE (FLAT TYPE) (11 CORE)	
64	1-694-003-11	JAMPER, FILM (WITH TARMINAL)	
△76	1-575-651-21	CORD, POWER (AEP)	
△77	1-575-653-21	CORD, POWER (E)	
△78	1-574-358-31	CORD, POWER (WITH CONNECTOR) (AUS)	
△79	1-558-946-21	CORD, POWER (UK)	
△80	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
△81	1-590-836-11	CORD, POWER (US)	
* 106	1-452-538-11	MAGNET	
111	1-590-849-11	WIRE, FLAT TYPE (5 CORE)	
△156	8-848-144-11	DEVICE, OPTICAL KSS-240A	
157	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-504-1	MOTOR ASSY, SLED	
M102	X-4917-523-3	MOTOR ASSY, SPINDLE	
M701	A-4604-585-A	MOTOR ASSY, ROTARY	
M702	A-4604-834-A	MOTOR ASSY, LOADING	
S701	1-572-713-11	SWITCH, PUSH (WITH CONNECTOR)	
△T901	1-449-955-11	TRANSFORMER, POWER (AEP, UK, AUS)	
△T901	1-449-956-11	TRANSFORMER, POWER (E)	
△T901	1-450-876-11	TRANSFORMER, POWER (US)	

Ref. No.	Part No.	Description	Remark
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ACCESSORIES & PACKING MATERIALS

1-558-271-11	CORD, CONNECTION (EXCEPT AUS)	
1-558-271-11	CORD, CONNECTION (US)	
3-754-847-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (EXCEPT US)	
3-754-847-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
3-754-847-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	

*	4-951-269-01	INDIVIDUAL CARTON	
*	4-951-270-01	CUSHION (FRONT)	
*	4-951-273-01	CUSHION (REAR)	
	9-910-999-33	INSTRUCTION (US)	

HARDWARE LIST

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#3	7-682-661-09	SCREW +PSW 4X8	
#4	7-685-136-19	SCREW +P 2.6X12 TYPE2 NON-SLIT	
#5	7-685-647-79	SCREW, TAPPING	
#6	7-682-548-04	SCREW +BVTT 3X8 (S)	
#7	7-682-554-04	SCREW +B 3X25	
#8	7-621-255-15	SCREW +P 2X3	

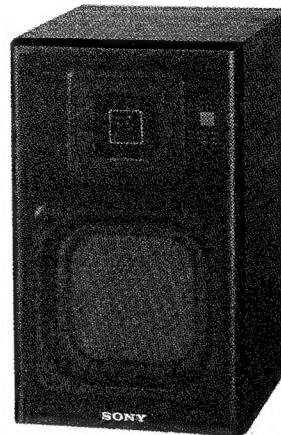
The components identified by
mark △ or dotted line with mark.
△ are critical for safety.
Replace only with part number
specified.

APM-2000

SERVICE MANUAL

SPECIFICATIONS

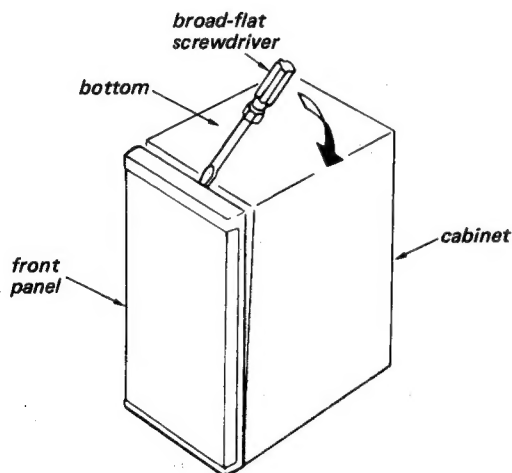
Speaker system	2-way
Speaker units	Woofer: 134 cm ² (20 ³ / ₄ in. ²), APM type Tweeter: 5 cm (2 in.), cone type
	<Super tweeter: 2 cm (1 ³ / ₁₆ in.), dome type>
Enclosure type	Closed type <Bass reflex type>
Power handling capacity	Nominal 35 W <45 W>
Sensitivity	87 dB/W/m
Frequency range	60 Hz to 20,000 Hz
Impedance	6 ohms
Dimensions	Approx. 170 × 290 × 205 mm (w/h/d) (6 ³ / ₄ × 11 ¹ / ₂ × 8 ¹ / ₈ inches)
Weight	Approx. 2.9 kg (6 lb 6 oz) <3.0 kg (6 lb 10 oz)> net per speaker



*US Model
AEP Model*

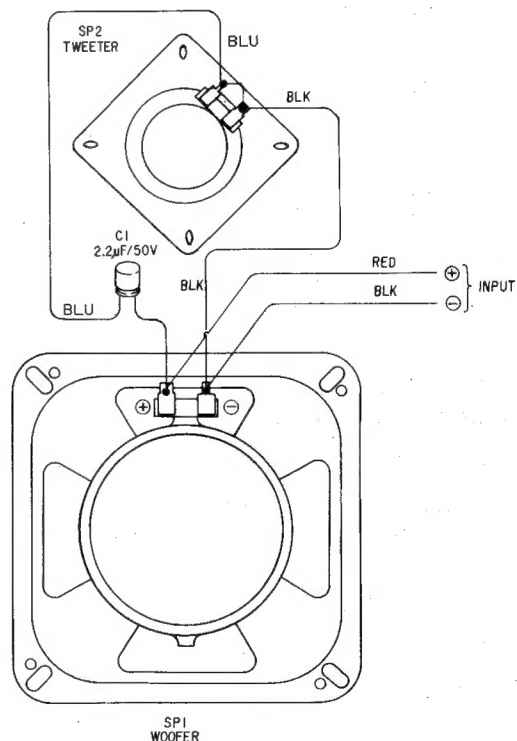
This set (US model) is the speaker system in MHC-1000 and MHC-2000.

1. FRONT PANEL REMOVAL



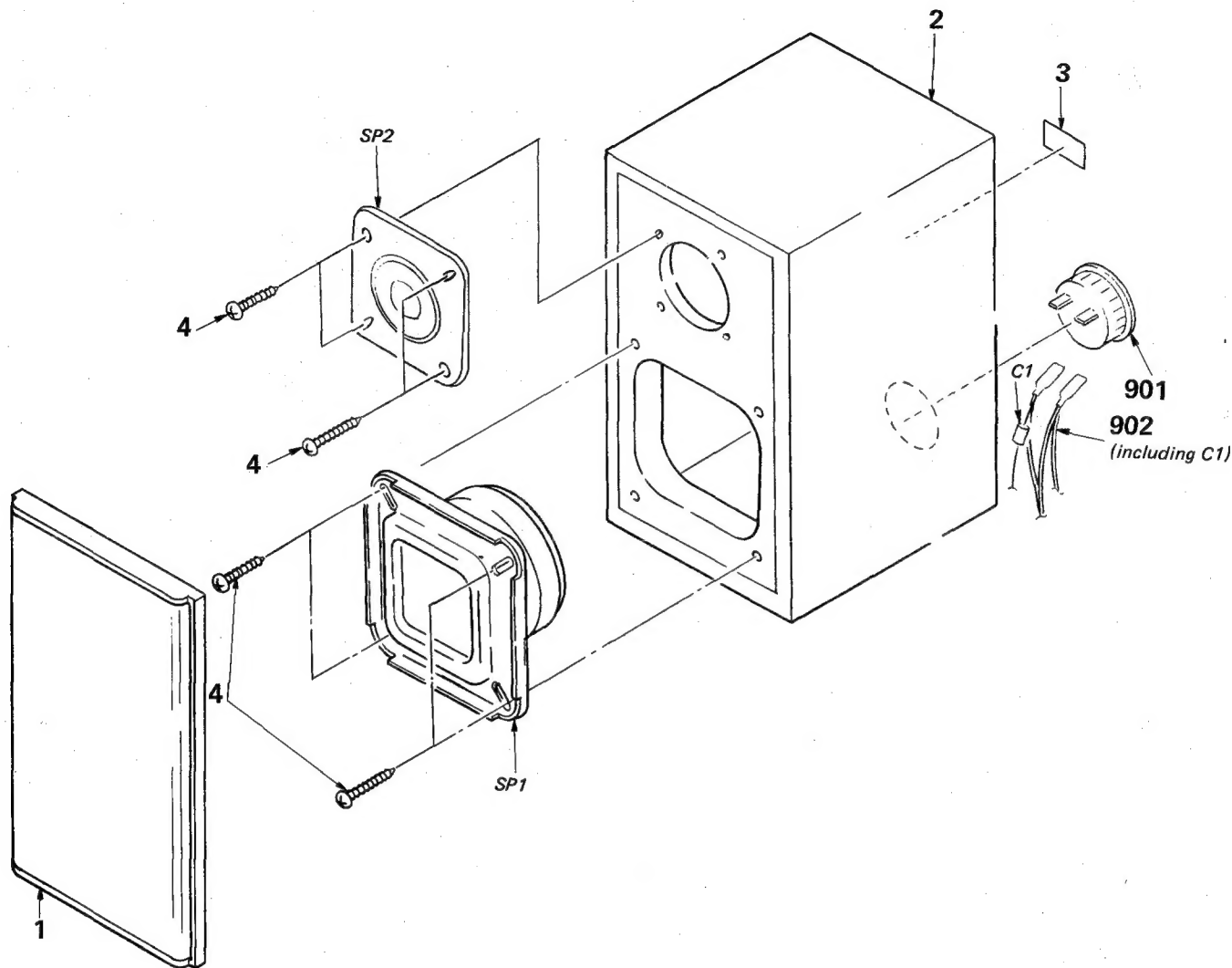
Note: Be careful not to scratch the cabinet.

2. WIRING DIAGRAM



SPEAKER SYSTEM
SONY®

3. EXPLODED VIEW AND PARTS LIST



No.	Part No.	Description	Remarks
1	X-4919-670-1	PANEL ASSY, FRONT	
2	4-925-515-01	(US,AEP).....CABINET, SPEAKER	
	4-925-515-11	(West Germany)...CABINET, SPEAKER	
3	*4-925-513-01	LABEL, MODEL NUMBER	
4	4-874-614-11	SCREW (4) (3.5X14), TAPPING	

No.	Part No.	Description
901	*1-537-037-11	TERMINAL BOARD (SPEAKER)
902	1-559-978-11	CORD, SPEAKER
C1	1-123-544-00	ELECT 2.2MF 20% 50V
SP1	1-503-962-11	SPEAKER (WOOFER)
SP2	1-503-960-11	SPEAKER (5CM)(TWEETER)

ACCESSORY & PACKING MATERIAL

4-920-121-01	CUSHION
4-920-151-01	SHEET, PROTECTION
3-786-084-11	(AEP)... MANUAL, INSTRUCTION
4-922-783-01	(AEP)... INDIVIDUAL CARTON
1-559-984-11	(AEP)... CORD, SPEAKER